REASSESSING THE NUCLEAR NON-PROLIFERATION REGIME IN THE 21st CENTURY

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Reassessing the Nuclear Non-proliferation Regime in the 21st Century

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Abstract

The Nuclear Non-proliferation Regime has survived numerous sea changes in the international political arena and it has weathered numerous challenges since the entry into force of the Non-proliferation Treaty, upon which the Regime is built. However, over the past decade, the Regime has been faced with unprecedented challenges and seemingly no solution to address them has been devised by the Regime's member state policy makers. There are many in the policy making arena and the academic community alike who declare the Regime is on the cusp of disintegration. Yet, a quick survey of the pertinent literature reveals that much of it fails to address the Regime in a holistic sense, fails to utilize a sound theoretical analysis, or both. This paper seeks to fill both holes by utilizing a "weak cognitivist" theoretical approach to regime analysis and by incorporating all aspects of the Non-proliferation Regime to assess its "effectiveness." Research reveals that the Nuclear Non-proliferation Regime is much broader than generally conceived and overall seeks to mitigate the potential threat to international stability and security posed by all aspects of nuclear technology. Ultimately the paper concludes that the Regime is still viable, though severely weakened, and that the Regime's "resilience" in the future is largely dependent on policy realignments of a few key states, with major policy changes necessary from the United States in particular.

List of Abbreviations

ABM	Anti-Ballistic Missile Treaty
CTBT	Comprehensive Test Ban Treaty
G4F	Generation IV International Forum
GNEP	Global Nuclear Energy Partnership
IAEA	International Atomic Energy Agency
IFNEC	International Forum for Nuclear Energy Cooperation
INFCE	International Nuclear Fuel Cycle Evaluation
INFCIRC	Information Circular of the IAEA
NEC	Nuclear Exporters Committee
NCA	Nuclear Cooperation Agreement (123 Agreement)
NEA	Nuclear Energy Agency
NMD	National Missile Defense
NNWS	Non-nuclear Weapon State
NPT	Non-Proliferation Treaty
NSG	Nuclear Supply Group
NWS	Nuclear Weapon State
SALT	Strategic Arms Limitation Treaty
START	Strategic Arms Reduction Treaty
UN	United Nations
UNSCR	United Nations Security Council Resolution
US	United States

Chapter 1:

1.1 Introduction

Today, the Cold War has disappeared but thousands of [nuclear] weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold.

U.S. President Barrack Obama, Prague, 2009

In the common understanding, the Nuclear Non-proliferation Regime is an international legal regime that was created and has developed solely in order to prevent the spread of nuclear weapons. The Non-proliferation Treaty (NPT) is often conceived of a comprising the entirety of the Regime and in the words of politicians and political pundits alike the NPT is wholly devoted to preventing the "horizontal spread" of nuclear weapons.[1] Even in the eyes of international relations academics and security specialists, the primary focus of the Regime and the treaty in particular is on the dangers of nuclear weapons and their spread (Njolstad, Foreword, x-xiii). The inescapable connection of anything nuclear to images of mushroom clouds and missiles renders the focus on nuclear weapons understandable. Yet, even the NPT itself addresses more than simply the spread of weapons, it extends into the field of civilian nuclear endeavors, and even to nuclear strategy concerns (NPT, III- IV, VI).

Nuclear energy and the technology to harness it has been in existence since the early 1940's when the states engaged World War II began to seek a more powerful form

[1] Horizontal spread, or proliferation, is defined as the spread of nuclear weapons across state borders, to new states. See: Buzan, 1987, 57.

of destruction than that offered by conventional weaponry and chemical explosives. Nazi Germany was the first to discover nuclear fission in the late 1930's, which led to investigation in the United Kingdom into the possibility of "fast fission" and the release of large amounts of energy (Meitner and Frisch, 239-240). Suspecting the implications of this "fast fission," scientists from the United Kingdom and Australia, then at war with Germany, subsequently examined the possibility for military use of uranium to produce "decisive results" in the war (MAUD Committee; see also Broinowski, 14-15). Renowned physicist Albert Einstein's letter on August 2, 1939, to then U.S. President Franklin Roosevelt first alerted the United States' government to the potential of uranium for military use as well as Nazi Germany's endeavor to utilize this potential (Einstein). Finally, findings by the British "MAUD Committee" and their subsequent insistence on action spurred the United States into a project that culminated in the testing and ultimate use of the atomic bomb in war.

The use of the Atomic bomb against the Japanese cities of Hiroshima and Nagasaki had a triple effect on world politics. First and most immediately, it ended the Allied war with Japan and produced the unconditional surrender of the Japanese Emperor to the United States. Second, it established the United States as the world's then only nuclear power and consequently the most militarily powerful state in the world; no other state could produce such a scale of destructive output so efficiently. Finally, and arguably most enduringly, it became the manifestation, in the open, of what had begun with the beginning of World War II: the nuclear arms race. Possession of nuclear weapons became a symbol of power, importance, and at least regional, if not global, gravity.

Nuclear energy and its benign applications for civilian power generation were essentially born with the same research that generated the military application. Thus, the concept of the use of nuclear energy arguably intrinsically bears the weight of its military counterpart in the general perception. Often in ordinary discussion the ominous "nuclear" specter poses a potential, though nebulous threat against the safety, health and livelihood of everyday people. To most of those concerned about the issue, this threat, at the very least, must be managed by educated, experienced, and sane individuals. In some eyes, the threat must be eliminated entirely, meaning the abolition of nuclear energy altogether.

As a result of the destructive power of nuclear weapons and the frightening prospect of their use on a grand scale in open warfare or, possibly more threateningly, their use in a pinpoint surprise attack, the subject of "nuclear" is always intertwined with safety and security concerns. Even civilian nuclear technology bears its own risks and thus its own separate concerns, not to mention those concerns that bridge the small divide between the civilian and military applications of nuclear technology, such as states developing weapons from an indigenous nuclear power program. The danger posed by civilian and military nuclear technology noted, the technology in any form conveys a certain power and status in the international community, even if that possession does not include nuclear weapons. Thus civilian nuclear capability alone is very attractive for the level of prestige it conveys. That prestige is in addition to its generally recognized high rate of efficiency (WNA, "Heat Values of Various Fuels"). However, as noted above, possession of civilian nuclear technology can also lead to the acquisition of military nuclear capability as well, thus some policy makers even oppose the spread of civilian nuclear technology.

In search of a method to mitigate the threat posed by nuclear technology and the fear of weapons proliferation, the majority of the international community in 1968, led by the predominant world powers at that time, drafted and ratified the Nuclear Non-proliferation Treaty. The NPT sought and seeks to achieve those goals of preventing the spread of nuclear weapons horizontally and vertically, to promote the spread of peaceful (i.e. civilian) nuclear technology, and to ensure safety and security are interwoven into any dealings in nuclear technology. The treaty, upon consideration of its language, is often delineated into those three "pillars," however there is one additional implicit pillar that will be discussed below. One finds that the treaty is very rigid regarding weapons while paradoxically being very flexible with regard to civilian applications of nuclear technology. Ultimately, the treaty leaves it up to individual countries through diplomacy to determine how they would execute the trade and development of civilian nuclear technology and the onus of preventing non-nuclear weapon states from crossing the civilian-military line was placed on an independent international agency (NPT, III).

While the Regime is very liberal in its treatment of civilian nuclear energy applications, it does include regulating aspects of the technology as well, regarding safety, trade, development, research, and disaster recovery. Recent events surrounding the earthquake, tsunami, and the subsequent nuclear crisis in Japan highlight the imperative that the Non-proliferation Regime be so thorough in its treatment of its issue area. Overall, some of the most prominent international security concerns regard nuclear issues. All of these issues will be identified and discussed in depth below. Given the international climate and the major concerns for stability, understanding the full scope of

the Nuclear Non-proliferation Regime and its prospects for the future is of paramount importance.

1.2 Statement of Purpose

The purpose of this research is to assess the Nuclear Non-proliferation Regime, focusing on its effectiveness (alternate terms are *strength* or *efficacy*) with regard to new developments in the international system and nuclear technology since the beginning of the 21st Century. The research will rely on both the primary texts (primarily documents and agreements) that constitute the regime as well as the analyses of academics and technical experts, which constitute an "espistemic community."[2] The study will first attempt to identify the scope, or issue area, of the regime, as well as its goals, norms, principles, and rules. The study will then proceed to its assessment of the regime and conclude with some recommendations for future policy applications.

Essentially, the aim of this research is to better understand the Nuclear Non-Proliferation Regime in terms of international regime theory and to utilize that theoretical foundation in order to assess how and why there might be problems with the regime. Thus, rather than critiquing specific shortcomings of the regime, this research seeks to approach the regime from a holistic perspective based on theory and subsequently to identify regime weaknesses in terms of that theory. Consequently the goal of analyzing the regime will be accomplished by specifically applying international regime theory, focusing on "regime effectiveness," and examining the Non-proliferation Regime's

[2] Epistemic communities are defined as "a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area" (P. Haas, 3). This concept will be further explored in subsequent sections, particularly in the "Theory section."

success at addressing threats to its integrity as an indicator of that variable. Specifically, the research will utilize a weak cognitivist perspective to international regimes theory, focusing on consensual understandings of the regime issue area as key determinants of effectiveness, while simultaneously drawing from the literature of the regime relevant "epistemic community."

1.3 Research Problem

This research began with an attempt at a short examination of the Jordanian nuclear energy program and Jordan's negotiations with the United States on a Nuclear Cooperation Agreement. Initial research quickly leads to the tenets of the Nuclear Non-proliferation Regime, the International Atomic Energy Agency (IAEA), and the Non-proliferation Treaty (NPT), which forms the backbone of the Regime. Preliminary examination of the NPT, and the debate surrounding the treaty, would seem to indicate that it rests upon three central tenets, or "pillars" (Blix, 7; see also Obama).[3] These are: a commitment amongst the non-nuclear weapon states to not obtain them, a commitment amongst nuclear states to slow and reverse the growth of their nuclear arsenals, and free access to peaceful nuclear technology conditional to IAEA safeguards. However, after discussing the U.S. – Jordanian negotiations with a member of the United States diplomatic team stationed in Jordan (Hinman), some aspects of United States policy were clarified, but there also seemed to be some inconsistencies and unclear issues.

[3] Of course, this assertion is not without debate. Joachim Krause would contend that the treaty is simply and solely dedicated to preventing proliferation, by which he means horizontal proliferation (he seems neglect to consider that vertical proliferation is still a type of proliferation). Others, including this author, would contend that the treaty actually consists of four pillars: three explicit ones and a fourth, implicit one. The first three are mention above, and the fourth will be discussed in later sections of this paper.

First and foremost, it seemed inconsistent that the United States was so insistent that Jordan willingly renounce its right to develop an indigenous Uranium enrichment capability.[4] While the proliferation risks inherent in indigenous enrichment programs are widely understood and the topic is the focus of intense debate internationally, the fact remains that states signatory to the Non-proliferation Treaty have a sovereign right to all peaceful aspects of nuclear technology (NPT, IV). Furthermore, the United States has recently concluded and ratified a Nuclear Cooperation Agreement[5] with India, which is one of the few states to have broken the non-proliferation norm,[6] with no restriction of enrichment rights in the treaty (U.S. Department of State). In fact, the only state that has willingly renounced its right to an enrichment program in an agreement with the United States is the United Arab Emirates (McGoldrick, 3-4).[7][8] Finally, amongst multiple other

[4] Uranium is an element that comes in a number of isotopes, the most common being U 238, which fissions only weakly. U 235 is much more fissionable and can be used to make a chain reaction which is then used to power nuclear power generators, research reactors, and, in its highest concentrations, nuclear weapons. For Uranium to be suitable for most civilian nuclear power generator, its concentration of U 235 must be enriched to anywhere between 2 and 8%. Nuclear weapons that rely on Uranium require 90% U 235 enrichment or higher (this is known as HEU or weapons grade Uranium). Civilian nuclear power generators and nuclear weapons can also utilize Plutonium, however Plutonium is extracted through different processes than Uranium and it is immediately fissile without undergoing enrichment. (See Mian and Glaser, 43)

[5] NCA's are also known in the U.S. as a 123 Agreement. This is a result of the U.S. 1954 Atomic Energy Act which stipulates in Clause 123 under what conditions the United States is allowed to conclude Nuclear Cooperation Agreements.

[6] Some academics debate the existence of such a norm or, if it exists, its effect (see Jo and Gartzke).

[7] The renunciation by the U.A.E. policy makers of the country's right to develop indigenous enrichment and reprocessing capabilities is certainly an extra-ordinary circumstance. However this renunciation is subject to a 'most favored nation' clause that allows the U.A.E. to renegotiate its agreement based on U.S. agreements with other countries in the region.

[8] Separately, with specific regard to Jordan, Jordanian policy makers immediately respond to any mention of the U.S.-U.A.E. Nuclear Cooperation Agreement by arguing that the cases are completely different as the U.A.E. does not have its own Uranium resources and therefore would have to import Uranium in any case. Jordan, on the other hand, has been found to have up to 130,000 tons of Uranium Ore, or an estimated 2% of the world's Uranium ore supply (Luck, 10 September 2010). The availability of this resource, in the eyes of Jordanian policy makers, represents a considerable economic opportunity.

agreements, no other state has insisted Jordan renounce its enrichment rights (McGoldrick, 5).

The second unclear and inconsistent issue was U.S. insistence that Jordan "cooperate closely" with Israel on its nuclear energy program (Hinman). This insistence, while not surprising, still seemed unfair and unnecessary. However, it is nominally out of "geopolitical" considerations, tied to the proliferation problems regarding Iran and North Korea that this insistence arises. Yet, when considering Jordan in this geopolitical context, none of the nuclear problems presented by North Korea and Iran can be taken in isolation. They only represent one aspect of the challenges to the Nuclear Non-proliferation Regime (Njolstad, x-xiii). Further, when considering the overt threats to the integrity of the Regime, meaning those states that ignore Regime precepts with regard to nuclear weapons,[9] it becomes immediately apparent that the concept of nuclear non-proliferation is inextricably tied to the spread of nuclear power and nuclear technology in general.

The NPT, as nominally a treaty established with a primary goal of preventing proliferation, designates the IAEA[10] as the body which establishes and maintains the safeguards to prevent military diversion of nuclear material and equipment. Yet, later the NEC,[11] the NSG,[12] the INFCE,[13]and the NEA,[14] became involved in setting trade,

[9] The list of states that ignore the Non-proliferation Regime's precepts is not confined to North Korea and Iran, but also includes India, Pakistan, Israel, as well as arguably the United States, Russia, China, France, and the United Kingdom.

[10] The IAEA predates the NPT.

[11] Nuclear Exporters Committee, also known as the Zangger Committee (Tate, 404).

[12] Nuclear Suppliers Group, also known as the London Group (Tate, 404).

business, and equipment regulations, along with "trigger lists" of sensitive material and equipment (Goodby and McGoldrick, 41), and safety standards (NEA, 2). In addition, during the last decade, the GNEP, now the IFNEC,[15] was organized to seek to entrench the non-proliferation norm and provide a forum for peaceful energy cooperation. In viewing just the names on this selective list of agreements, studies, and organizations, which doesn't even mention the relevant nuclear arms treaties between the U.S. and Russia, it becomes no wonder that the former U.S. Ambassador to the United Nations referred to non-proliferation and arms control treaties as "alphabetical soup" (Blix, 8). When one actually views the content and products of the agreements and organizations, it becomes a mess of overlapping and interlinked concepts that revolve around nuclear technology and nuclear arms concerns.

The confusion began with a simple question regarding Jordan's nuclear cooperation prospects with the United States and why the U.S. wanted Jordan to renounce its enrichment rights. On the surface, the answer, in essence, is to maintain the Nuclear Non-proliferation Regime. Yet, Jordan apparently has an excellent non-proliferation record,[16] which begs the question: what is the Non-proliferation Regime? Further, when considering the issues surrounding Jordan's nuclear file and the U.A.E.'s nuclear file, if both are regarded in terms of the threat of proliferation of nuclear

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[13] The International Nuclear Fuel Cycle Evaluation, a one-time meeting from 1978 to 1980, between experts from various countries regarding fuel enrichment rights and risks (Tate, 409). The final report was extensive and arguably useless for any applicable purpose.

[14] Nuclear Energy Agency, which is part of the Organization of Economic Cooperation and Development. (Nuclear Energy Agency, 2)

[15] Global Nuclear Energy Partnership, now known as the International Framework for Nuclear Energy Cooperation

[16] Jordan hosted the first meeting of the new IFNEC, at the King Hussein Bin Talal Convention (IFNEC, Joint Statement, 1) and a seat on the board of governors of the IAEA (*Jordan Times*, 24 September 2010).

weapons, what other cases must be considered in such terms? Next, if there is a regime to address issues of non-proliferation, how is it performing? Is it addressing the threats effectively? How has that regime performed in the past? Will it continue to perform in the future? If the United States' policy makers are so concerned about Jordan, does that concern indicate anything about the effectiveness and future of the regime in itself? Finally, how does one approach all of these questions from an informed perspective, based on a sound theoretical and factual footing?

After initial forays looking into the facts and theories, the questions and concerns posed above boil down to few straightforward questions. First, what regime theory seems most applicable to the Nuclear Non-proliferation Regime? Then, what is the regime "issue area" to which the Non-proliferation Regime? Next, what are the Regime's goals, principles, and norms, and the component agreements and organizations which express or institute those things? Next, how effective is the regime now and how resilient will it be in the future? Ultimately, after offering some possible answers to these questions, what are some applicable analyses and recommendations that might benefit policy makers in the relevant issue area?

Research Question

In clear cut terms, this research attempts to answer two questions:

1) What are the issue area, goals, principles, norms, and rules of the Nuclear Non-proliferation regime?
2) Currently, for the 21st century, how effective is the Nuclear Non-proliferation Regime?

This research will attempt to approach these questions from a theoretical standpoint, relying heavily on international regime theory, thereby assessing the Non-proliferation Regime with a primary focus on current concerns.

1.4 Methodology

As noted above, the research will utilize a primarily theoretical approach to create a qualitative analytical assessment of the Nuclear Non-proliferation Regime, drawing extensively from the Regime's pertinent epistemic communities as well as numerous agreements which contribute to the Regime. This research has two central questions, but three elements that need to be addressed through different methods. The first question comprises one element; that is, defining the Regime by its issue area, goals, principles, norms, and rules. This element of the research will rely on two methods. The first will be to review the literature regarding the Nuclear Non-proliferation Regime. This will allow us to draw from the preexisting literature and determine what agreements are generally considered to the part of the Regime. In addition, it will present us with the scholarship and opinions of those experts regarding the specific question directly. The second approach will be to identify the goals, principles, norms, and rules directly from the agreements and organizations that are pertinent to the regime, once identified from the preexisting literature. Once, the pertinent agreements are examined, it will not only be possible to identify goals, principles, norms, and rules, but it will also be possible to approach the Regime from a comprehensive standpoint, and confidently delineate the Regime's overall "issue area." In this way, this research can confidently outline the

Nuclear Non-proliferation Regime, which will then allow us to apply theory, arrive at a hypothesis, and thereby proceed to addressing the second question.

The second question focuses on an element that is rooted in background understanding of international regime theory: *effectiveness*. As discussed in detail below, this research will rely on a "weak cognitivist" perspective to international regimes, meaning that "consensual understanding" of the regimes issue area between policy makers underwrites the correspondence of member states' interests. Again, as noted below, the Nuclear Non-proliferation Treaty includes a provision for a review conference to be held every five years, to assess the pertinent proliferation concerns and to attempt to create consensus regarding the nature of those concerns and methods for addressing them. In order to assess regime effectiveness, then, this study will rely on the final documents produced by those conferences to determine the "consensus understanding" between member states. The study will then compare the "consensus" approach of the whole to particular states' policy actions as a measure of the strength of said "consensus."

An alternate and complementary concept, r*esilience*, is essentially described as a dynamic measure of effectiveness, allowing for an assessment measure that has a historical facet.[17] Yet resilience is nonetheless very difficult to assess and measure. While measuring past effectiveness of the regime is not too difficult, it is the future aspect, or the expectation of policy makers for the regime to remain effective, that is most difficult to assess (naturally, as prediction in any aspect of the social sciences is currently next to

[17] This concept is explored in Hasenclever, Mayer, and Rittberger (1996, 178; 1997, 2). Arguably this historical facet is best suited for the weak cognitivist perspective, particularly incorporating capacity for "learning" amongst individual (or collective) groups of policy makers. The concept of "learning," meaning changes in causal or normative beliefs based on new information or theories about information which results in change in state behavior, is not as well suited to the rationalist approaches to international regime theory (or international relations theory in general).

impossible). Thus, this research will rely on a specific part of the weak cognitivist theory, known as "epistemic communities"[18] to make a brief conjecture regarding the likely resilience of the Nuclear Non-proliferation Regime.

The Nuclear Non-proliferation relevant epistemic communities constitute a broad body of technical and academic expertise. This study will draw on the expectations of these communities, which include nuclear technical experts, nuclear weapons experts, strategy and security analysts, and nuclear regulatory practitioners. As the body that nominally influences and guides policy makers, if there is a general consensus among these epistemic communities over regime relevant issues, and if policy makers are not making egregious divergences from this consensus, then the regime should remain relatively resilient. However, if there is a high degree of intra-epistemic community divergence over regime relevant issues, or if policy makers are diverging shaprly from a consensus view, then one would expect that the regime will be less resilient. Indeed, as Emmanuel Adler and Peter Haas assert (384) "one of the factors affecting how long an epistemic community remains influential [in policy making] is the degree of consensus among community members." They go on to argue "when an epistemic community loses its consensus, its authority is diminished and decision makers tend to pay less attention to its advice."

In summary, as discussed above, this study will focus on three elements. The first will be defining and outlining the Nuclear Non-proliferation Regime, including its issue area, goals, principles, norms, and rules. This will be done by relying on previous

[18] Epistemic community will be defined and explored more in depth below. For the purposes of clarity in this section, however, they are defined as "a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area" (P.Haas, 3).

analyses as spring boards for further study and, subsequently, analysis of the agreements and organizations that constitute the regime. Second, the study will seek to assess the regimes current degree of effectiveness.[19] This will be done by examining documents and statements created by collective groups of policy makers, to determine the "consensual understanding," and then assessing the level of divergence by particular states from consensually agreed regime issues. Finally, the study will seek to make a brief conjecture on the degree of regime resilience. This will be done by incorporating the concerns and perceptions of regime relevant epistemic communities, first assessing the level of disagreement between those communities, and then considering their perceptions in light of the effectiveness which will be examined and determined prior.

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[19] As demonstrated throughout the beginning of the 21^{st} century.

Chapter 2: Theoretical Literature Review: Outlining an Approach

The central focus of this paper is to assess the nuclear non-proliferation regime in the twenty-first century, thus it is appropriate to begin with an overview of the literature addressing theories of international regimes. As previously published literature reviews provide a decent guide from which to begin research, a Andreas Hasenclever, Peter Mayer, and Volker Rittberger essay (1996) and subsequent book (1997) provide good jumping off points. International regimes became an independent field of enquiry, as a sub-field of international relations study, in the middle of the 1970's, with key investigations by John Ruggie and Ernst Haas (Haas 1975a,b; Ruggie 1975). The initial foray into regime study has led to the development of numerous theories and research agendas, as well as some skepticism regarding the entire concept of regimes (Strange, 479). Overall, regime theory can be broken down into three general groups or schools based on their assumptions and foundations: power-based theories, interest-based theories, and cognitive theories (also known as knowledge-based theories) (Hasenclever, Mayer, and Rittberger, 1997, 1).

Before delving into the specifics of the divergent schools of thought, a clear definition of "regime" is necessary as a foundation upon which to build the theory. Like many concepts in the political sciences, the definition of regime has yet to reach a unanimous definition. Despite the lack of unanimity, theorists have reached what Hasenclever, Mayer, and Rittberger (1996, 179; 1997, 9) refer to as a "consensus definition." The definition was first proposed by Stephen Krasner (185) and later expounded and expanded slightly; it defines "international regimes as *implicit or explicit* principles, norms, rules, and decision-making procedures around which actor

expectations converge in a given issue-area *of international relations*."[20] While other definitions have been put forward, and some considered the consensus definition tends to remain in use.

One of the issues with the consensus definition, as Oran Young points out (Hasenclever, Mayer, and Rittberger, 1997, 11-12), is that the differentiation between the elements of a regime becomes nearly impossible. In other words: what are the conceptual differences between a rule, a norm, a procedure, and a principle? This ambiguity allows for some uncertainty as to how one identifies and distinguishes a regime and could possibly lead one to the conclusion that *any* regularized practice in international relations constitutes a regime. On the other hand, a strong benefit of the consensus definition is that it offers thoroughness to the regime concept, allowing different classifications of regimes. Furthermore, as Hasenclever, Mayer, and Rittberger argue, the consensus definition adds a crucial element of determining changes *within* a regime and change *of* a regime (1996, 180; 1997, 13). Krasner asserts that "changes in rules and decision-making procedures are changes within regimes" (Krasner, 187) while "changes in principles and norms are changes of the regime itself" (188). This distinction has implications for examining regime effectiveness, which will be addressed later.

2.1 Epistemological Approaches: Conceptualizing Regimes

This paper is not interested in examining the theoretical roots of regime determination nor in debating the epistemological approaches to identifying regimes; however, it is crucial to understand the various perspectives and place this paper's theoretical approach within one of those perspectives. One approach is termed by

[20] Note: Italicized words were added in subsequent articles.

Hasenclever, Mayer, and Rittberger as the *behavioral approach* (1996, 180-181). This approach places primacy on states actually practicing the tenets (norms, principles, rules, and procedures) of the regime, thus demonstrating the regime's existence through state behaviors. This outlook echoes the "consensual approach" towards international law, again based on the actual practice of states (Dixon, 15). However, this approach presents some difficulties, where the analyst might consider any repeated practice amongst various states as constituting a regime. While the behavioral approach does have merit, it also presents numerous epistemological problems often leading to circular reasoning, where the enquirer identifies a regime based on behavior and then uses the regime to explain the same behavior (Hasenclever, Mayer, and Rittbereger, 1997, 17). Ultimately, merits and weaknesses aside, this approach proves burdensome and unnecessary in analyzing the Non-proliferation Regime, and thus will not be used in this paper.

Another approach to regime identification and delineation is that of the cognitive approach, in which "inter-subjective meaning and shared understanding" (Hasencelver, Mayer, and Rittberger, 1997, 16-17) acquire central importance. This approach relies heavily on communication between states and its methodology diverges slightly from the mainstream, generally positivist, approaches. In addition, the cognitive regime identification aligns more coherently with the *strong cognitivist* school of regime theory, which attempts to understand regimes as societal intercommunicative structures, than it does with any of the other schools. Thus, the cognitive approach is appropriately tailored to only one school of thought. Again, this approach is burdensome, unnecessary, and too controversial in regime theory when discussing the Non-proliferation Regime.

The final approach, and the one upon which this paper will rely, is the formal approach to regime identification. This approach simply relies on a body of explicit norms and principles, as defined through agreements, treaties, and other documents. This approach is favored by Keohane, the author of one of the leading interest based theories, and even incorporated into his definition of regimes, which rests on regimes having "explicit rules" (Hasenclever, Mayer, and Rittberger, 1997, 12). This paper rests its regime epistemology in this approach solely out of convenience. The paper's research problem and question are not founded in questioning the existence of a Non-proliferation Regime, nor on the regime epistemology in general. Thus, in a sense, a central aspect of this paper is its assumption that international regimes do exist and that the Non-proliferation Regime, as *formally* determined by the Nuclear Non-proliferation Treaty and other agreements and organizations, is one of these regimes.

2.2 The Schools of Thought: Finding a Suitable Perspective

As stated above, Hasenclever, Mayer, and Rittberger divide the regime theory world into three general sections: interest-based, power-based, and knowledge-based (i.e. cognitivist) (1996, 178-179; 1997, 4-5). These three broad theoretical approaches effectually follow similar theoretical lines dividing the Neoliberal, Realist, and Constructivist approaches to international relations as a whole. The interest-based, or Neoliberal, school generally represents the "mainstream" approach, as evidenced by Neoliberalism's alternate name, Neoliberal Institutionalism. This school is regarded as the mainstream because the other theoretical schools often position their concepts in

relation to the Neoliberal approach (1997, 23), thereby critiquing it and offering alternatives.

2.2.1 Interest Based Theories: Cooperating for Benefit

Within the interest based theoretical approach to regimes, there are a number of specific theories that have developed. The first and arguably most basic, first proposed by Keohane, is entitled "Contractualism," reflecting Keohane's preferred definition and epistemological approach to regimes. The theory relies heavily on the "Prisoner's Dilemma," conceptualizing (and, in essence, reducing) the international environment as essentially a choice between cooperating and not cooperating (Hasenclever, Mayer, and Rittberger, 1996, 185). Keohane also attempts to place this theory in a systemic context, reflecting the approach of Neorealists: asserting an extreme rationalist approach in that states are both unitary and utility maximizing, and that the distribution of power and wealth are the predominant factors that impact state behavior (184). In Keohane's picture, regimes serve simply as "monitoring arrangements" that allow access of information between states to help reduce their fear of being cheated (see also Mitchell, 109-110). This regulating effect becomes stronger when there are repeated and interlinked iterations of the situation in which states will be presented with the same issue area choices. Furthermore, a large aspect of the role of regimes is their reputational effects for states, whereby a consequence of cheating is a negative reputation (Hasenclever, Mayer, and Rittberger, 1996, 186).

Contractualism suffers from a number of failures in explanatory capacity regarding regimes. First among these is the fact that real world situations are not limited

to simply "cooperate or not." This would imply that states are presented with only two choices, when in reality they are often presented with many. Furthermore, and linked to the first issue, it does not account for the structure of regimes, which often have many possible paths of regulation, often depending on the states' understanding or conceptualization of the issue area around which the regime is constructed. Also, the theory does little good in explaining changes, development, and evolution in regimes. Finally, and arguably most importantly, it is susceptible to cause-effect relationship confusion and the "*post hoc ergo proper hoc*" fallacy (195-196). While a number of subsequent theories have arisen to attempt to fill the gaps, namely by adding Game Theoretical models and multiple option scenarios, none have effectively filled all of the inconsistencies, particularly the fallacy of using the effect to explain the cause. One notable addition to the Interest based school of thought is that of Oran Young (1980, 1982, 1991), with concepts to account for perceptions, uncertainty in cooperation, and regime transformation (1982, 290-291). Young's contribution resulted in him being considered a "Grotian" by Krasner (Krasner, 192) and while rooted in the Interest based school, his work becomes something of a bridge towards what will be known as "weak cognitivism," which is discussed below.

2.2.2 Power Based Theories: Might Makes Right Structure

Power based theories of international regimes distinctly align with the Realist tradition in overall international relations theory, giving distribution of "power" predominance in questions of international interaction. Hegemonic Stability Theory, a prominent theory in the Realist tradition, predates the explicit development of the

international regime research project; however, its influence on the development of regime theories can be seen in both those that are interest based and power based. The theory holds that regimes are established and maintained by one, and only one, single actor that holds the majority of power in the system, or in the case of regimes, in a particular issue area. Furthermore, it holds that the regime will then decline when power is more evenly distributed (197). The implications for large scale cooperation in this theory are limited and, with specific regard to international regimes, empirical evidence suggests that a regime can arise without the influence of one hegemon (198).

Stephen Krasner, one of the coordinators and initiators of the international regime project, levels a large amount of criticism on interest based theories and particularly Contractualism for limiting success to simply cooperation. Krasner argues that states are less concerned about cheating in the regime, amounting to non-cooperation, but rather about distribution of benefits. In this consideration, there may be “multiple cooperation solutions” by which a regime is structured, with each structure distributing certain benefits on certain actors involved. Thus, power intervenes as a factor that allows particular actors to determine who is involved, the course of negotiations, and ultimately the distribution of benefits (i.e. “the pay-off matrices”) (200; see also Gowa, 322-324). Other power based theories tend towards similar critiques of the Interest based perspective, further adding that Neoliberal theories tend to misunderstand the nature of “anarchy” in the international system. These critiques hold that states are “defensive positionalists,” cooperating only if they see balanced distribution, and ultimately suggesting that regimes “affect the prospects for cooperation only marginally” (Grieco, 488).

Power based perspectives on international regimes seem to level significant criticisms at the Interest based perspective. However, they do not seem to offer much in regards to filling any of the gaps in the Interest based theories which they identify; rather, they seem to consider international regimes as having a marginal effect on international politics, at best. In addition, as the Interest based perspective before it, the Power based perspective provides little insight or means of explaining why regimes might persist and why they might change and evolve. The question of why regimes persist is particularly pertinent if regimes are such a negligible variable, as many Realists assert. Finally, as mentioned above, Power based perspectives fail at explaining the development of international regimes when there is no clear disparity in power held by actors in that regime.

Overall, the two schools of thought in the international regimes research project align very starkly with their associated international relations traditions: Interest based with Neoliberal (highly influenced by the Liberal Idealist tradition) and Power based with the Realist tradition. In fact, a criticism one might level at both perspectives is that they attempt to fit international regimes into their respective pre-determined traditions. Rather than attempt to examine regimes as independent factors in the international system, they subsume regimes into broader theoretical perspectives. This tendency in turn can lead to the cause-effect fallacy which attempts to use effects as explanations for the cause and subsequently the cause to explain the effects. Most important for this paper, as neither perspective views international regimes as independent forces in international relations, neither is very effective at explaining regime effectiveness, and arguably even worse at developing conjectures for regime resilience. As these concepts are the core of this paper,

which primarily seeks to determine the effectiveness of the Non-proliferation regime, neither perspective immediately presents itself as an effective tool of analysis.

2.2.3 Knowledge Based Theories: Perspectives on Perceptions of Preference

Knowledge based theories in international regimes research, known more simply as *cognitive* approaches, take two diverging paths. Hasenclever, Mayer, and Rittberger, label these two as *weak cognitivist* and *strong cognitivist*. Both of these branches of Cognitivism share certain criticisms towards their competing theories, those of the Interest based and Power based schools of thought. First, they call into question the automatic assumption that states are unitary rational actors with stable interests. Second, the static approach to analyzing international regimes preferred by extreme rationalist perspectives does not account for learning or for historical shifts. Finally, the positivist methodology has limited to no value for considering the effect of social norms (Hasenclever, Mayer, and Rittberger, 1996, 206). The common criticisms towards the rationalist schools shared by the cognitivist approaches indicate some common ground in perspective towards regimes and international relations in general; however, the two branches do differ significantly.

The *strong cognitivist* approach is labeled as such because it generally takes the stance that all relations between states is framed by norms of social interaction and subjective communication (213). This would ultimately imply that regimes are not only important parts of international relations, but rather absolutely imperative. In this view, regimes are the context in which any state behavior is analyzed and interaction is understood or perceived. Some of those who support strong cognitivist perspectives also

attempt to integrate some rationalist concepts into their theories in order to demonstrate that even should states be unitary egoists, inter-subjective interpretation of problems and goals is a defining factor for interaction and cooperation (Ruggie, 1972, 892).

The strong cognitivist approach to international regimes is arguably the most unorthodox of the streams of regime theory in that it does not rely on a positivist methodology and calls into question many of the assumptions of the orthodox schools of thought. While strong cognitivism does present some valuable insights and perspectives, ultimately the theory broadens regime theory to such an extent as to say regimes are the primary factor in international relations because any standardized norm of behavior can take on the essence of a regime. Indeed, in such a view the practice of international relations itself constitutes a regime, so long as interaction and communication between states retains a certain degree of interpretive uniformity. Thus, strong cognitivism does not lend itself to an effective analysis of particular, formalized regimes, such as the Non-proliferation Regime. Furthermore, effectiveness of regimes loses a great deal of precision, as factors such as power, interests, and even perceptions, lose importance to the concept of inter-subjective communication.

Weak cognitivism is regarded by Hasenclever, Mayer, and Rittberger as a theoretical perspective that informs and expands the rationalist approach, primarily the Interest based school, though with some effect on the Power based school as well (1996, 219). They identify a number of assumptions in the weak cognitivist school of thought that distinguish it from its rationalist competitors. First, that interpretation plays a central role in actors' policy choices. (206; see also Adler and P. Haas, 367) Second, consensual understanding and conceptualization of a problem or issue-area is important, if not

essential, to regime formation and performance (206; see also P. Haas, 29). The third and final general assumption is that there is a growing demand (or need) for technical expertise and advice amongst policy makers, as new technology and theories “devalue traditional policy strategies” (206).

Specific forays into the weak cognitivist line of thought include some by Peter Haas, Ernst Haas, Emmanuel Adler, James Sebenius, and even Robert Keohane. The school also has some parallels to, though doesn’t necessarily draw from, literature on international society from authors such as Hedley Bull, Barry Buzan, and Oran Young. Keohane’s contributions reflect recognition of the deficiencies in his own “Contractualism” theory, by exploring the concept of ideas as “causal pathways” for choosing a particular course of action out of many possibilities (whereas Contractualism seems to limit the possibilities to only “cooperate” or “defect”) (207). Peter Haas and Ernst Haas, among others, have contributed compelling arguments for the role of learning and changing perceptions leading to a change in behavior (which can happen without any redistribution in power or wealth) (208; see also: E. Haas, 361 and P. Haas, 30). Finally, linked to both concepts, “consensual knowledge” and “epistemic communities” can shape how states conceive of an issue area in which they might cooperate, thus informing how they seek to address that issue area (208, see also: P. Haas 29-30 and Sebenius, 325).

This paper will rely on weak cognitivist conceptions of international regimes. The weak cognitivist approach is best suited to analyzing the effectiveness of the Non-proliferation regime because it does not discount interests and power considerations, but places preeminence on perceptions of policy makers, learning, and consensual knowledge. These factors allow the most comprehensive explanations for the initiation

and growth of the Non-proliferation regime and serve as the most effective tools for assessing the effectiveness of the regime as it stands in the 21st century. Weak cognitivism, along with its component concepts, will be explored more comprehensively and a mode of assessing both effectiveness, along with conjectures for resilience, will be determined below.

Chapter 3: The Theory: Placing Weak Cognitivism in Context

First, to reiterate, this paper will rely on what is termed "the consensus definition" above. The definition was first advanced by Stephen Krasner (185) and has come to be used by many other scholars as the generally accepted definition (E. Haas, 1980, 358; see also Young, 1982, 277, which has some differences). This definition states that international regimes are defined as *explicit or implicit principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue-area of international relations*. While this definition certainly poses some theoretical complications and intellectual controversy, this paper is not so much concerned with advancing regime theory as with practical application in assessing the Non-proliferation Regime.

3.1 The Main Ideas: Regimes as Cognitive Constructs for Policy Coordination

Weak Cognitivism, as briefly explained above, places primacy on perceptions and interpretation, consensual understanding and learning, and the influence of groups of technical experts, called "epistemic communities" (Hasenclever, Mayer, and Rittberger, 1996, 206). These central concepts represent the fundamental assumptions of the Weak Cognitivist school of thought and they have considerable consequences in relation to other theories in international relations. First and foremost is that the assumptions place the school outside of the rationalist approach, which is one of the central assumptions of both the Neoliberal school and the Realist tradition. Essentially, in Weak Cognitivism, states are not unitary actors and they are not entirely self-egoist. Thus, states are not always *rational*. For the purposes of regime theory, this argument needs to be expounded.

In the general conception of international relations study, states' interests are stable and considered to be similar. This perspective is evidenced by the Power based argument that states are "defensive positionalists," with security and survival is their ultimate goal (Hasenclever, Mayer, and Rittberger, 1996, 202; see also Gowa, 1989, 1246). However, Weak Cognitivists argue that to view states' interests as such, while somewhat beneficial heuristically, can be misleading. Specifically, Adler and P. Haas argue that:

> *Many scholars have supplemented neorealist approaches with rational choice assumptions, usually making for good formal and heuristic theorizing. By incorporating exogenously determined preference orderings into their analyses, they have disregarded some of the most important sources of expectations lying at the individual (subjective) and institutional (inter-subjective) levels.* (369).

In simple terms, they suggest that to consider states' interests as stable and similar is to disregard the entire foreign policy making process within states, which begins domestically and is often created with deference to its domestic impact. Indeed, Adler and P. Haas begin that particular essay explicitly asserting their intention to "erase the artificial boundary between international and domestic politics so that the dynamic between structure and choice can be illuminated." (367)

Ernst Haas approaches the rationality argument from a different angle. First, he echoes Adler and P. Haas, arguing that:

> *Explanations that rely on power assume a constancy of state interests; complex interdependence suggests that states (read: policy-makers) are no longer certain how various goals should be ranked when the opportunity costs of adopting new goals at the expense of old ones must be evaluated.* (1980, 359)

Simply, he indicts the rationalist approaches as too narrow minded to be effective tools for analyzing international relations. However, Haas adds the "ingredient" of knowledge

and asserts that states *are* rational “in that actors show concern over cause and effect and the relationship between ends and means, in seeking to obtain a goal.” (1980, 374) Thus, perceptions and interpretations (i.e. knowledge) lead a state to make choices and set policies. Those policies essentially reflect the states’ interests, which determine how and why a state may or may not cooperate and become involved in the formation and preservation of a particular regime.

Ernst Haas considers interpretations and perceptions of policy makers to be “knowledge,” explicitly defined as “the sum of technical information and of theories about that information which commands sufficient consensus at a given time among interested actors to serve as a guide to public policy designed to achieve some goal” (E. Haas, 1980, 367). Emphasis must be placed on “theories” about certain information which command “consensus” in order to guide policy. In addition, this definition aligns with the second Weak Cognitivist assumption. Not only do each state’s policy makers have “knowledge” which informs their policy choices, but there is also interplay between the varied knowledge between state policy makers. E. Haas asserts that there must be shared or similar knowledge for the development of “issue-areas” around which international regimes are built (367). This shared knowledge, or consensual understanding (Adler and P. Haas, 369), then allows for cooperation and the establishment of consensually accepted principles, norms, rules, and procedures in the issue-area (see also Buzan, 1993, 335)[21].

[21] While not specific or limited to Regime Theory, Buzan attempts to draw correlates between the English School’s concept of International Society and some of the concepts being explored in International Regime Theory. Buzan’s essay draws largely from the cognitivist theories, and primarily from those of the weak cognitivists, in linking the two schools of thought. This tie also speaks for the links one might draw between Oran Young’s contributions to Regime Theory and the Weak Cognitivists, as Young is sometimes considered a “Grotian” where Buzan and the English School are also considered to have strong links to Grotian ideas. Indeed, Buzan’s argument might be seen as wholly a cognitive one in that he asserts “the

Further to consensual understanding between the policy makers of various states, those policy makers are subject to “evolution” (Adler and P. Haas, 385) or “learning” (E. Haas, 1975b, 827, 845-846). These concepts state that policies can change, or evolve, as a result of new knowledge (read: consensual understanding and theories about information) amongst state and international policy makers. Adler and P. Haas elucidate their point, explaining that “at any time and place of a historical process, international actors may be affected by politically relevant collective sets of understandings of the physical and social world that are subject to political selection processes and thus to evolutionary change” (371). Thus, policy makers may come to “learn” an international scale consensual understanding in a given issue-area, and then subsequently arrive at consensually recognized modes of addressing that issue area. However, the possibility for the reverse exists if a certain state’s policy makers’ “knowledge” evolves away from the international consensus.

Hasenclever, Mayer, and Rittberger add that learning can take two separate forms in terms of the effect on policy making (208). First, new understandings or perceptions of reality can prompt decision makers to alter their strategies for achieving certain goals. Second, new understandings or perceptions of reality can alter perceptions of *interests* or *goals*, resulting in a change in strategy altogether. Overall, the central theme is: a change in beliefs results in a change in behavior. This view of the effect of “learning” has particular significance below, in the operationalization of effectiveness.

Finally, the third assumption of Weak Cognitivists reflects on the arrival at “knowledge” and consensual understanding among policy makers and states, as well as

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idea of society [of states] is self-reinforcing in as much as *consciousness* of it helps to consolidate and reproduce its reality” (329).

the learning process that affects those actors. The assumption is that as certain public policy issues become increasingly technical and complex, technical expertise and groups of experts come into higher demand and thus have a stronger effect on policy makers. These groups of experts are known as “epistemic communities” and are considered to be international, or more accurately transnational in their influence (P. Haas, 4). P. Haas defines these communities as “a network of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area” (3).

There is an extensive degree of research and literature regarding the influence of epistemic communities on policy choices and prospects for cooperation in particular issue areas. Emmanuel Adler and Peter Haas, in particular, have produced essays and compilations of research on the existence and distribution of groups of scientists, which they assert generally have “shared normative beliefs and principles” (3). Drawing from E. Haas, to regard Nuclear Non-proliferation issues as a “whole” to be dealt with by a scientifically informed policy approach may be unrealistic (1975b, 827, 829-830). For this reason, for the purposes of this research, the “epistemic community” will only serve as part of the methodology rather than an active part of the theory. In effect, the epistemic communities surrounding nuclear issues, including those involved in nuclear energy, in nuclear non-proliferation, and in nuclear strategy, will inform this research through its operational hypothesis. Therefore, essentially this paper assumes the existence of a number of nuclear issue area related epistemic communities and will draw on those communities as part of the methodology. Finally, in terms of conclusions,

recommendations, and perspectives for the future the nuclear epistemic communities may indeed prove a useful tool.

3.2 Theoretical Tools: Effectiveness as a Palpable Concept

Regime effectiveness, or strength, is a central issue in regime theory. In a general sense, the concept informs the question of “do regimes (read: in general) matter?” (Hasenclever, Mayer, and Rittberger, 1996, 178). However, in regards to specific regimes, the two concepts represent immediately applicable and crucial pieces of information. In essence, the question for a policy maker may be “does this particular regime matter?” Even more specifically, in context of the definition for international regimes above, a policy maker might ask “might I expect the principles, norms, rules, and procedures to be followed internationally in regards to ‘this’ issue area now and in the near future?” The answer to this policy relevant question lies in the effectiveness and resilience of any regime regarding that issue area.

Regime effectiveness is defined by Hasenclever, Mayer, and Rittberger as having two facets. They assert that:

> *First, a regime is effective to the extent that its members abide by its norms and rules. Second, a regime is effective to the extent that it achieves the objectives or purposes for which it was intended.* (1996, 3)

The second part of the definition is straightforward and uncontroversial in regards to this research. The first part is also straightforward; however, in light of the above discussion, it could also be adjusted slightly to incorporate influence over state policy makers, interests, and perceptions. Thus, the first aspect of the definition would read as follows: *a*

regime is effective to the extent that member state policy makers perceive that it is in the state's interests to abide by the regime's norms and rules in the issue area concerned.

This change, specifically tailored for the weak cognitivist argument, puts the emphasis on the individuals involved in the decision making process and on the role of perceptions and interpretation amongst those individuals. The above definition attempts to allow conceptual space for Barry Buzan's claim that in international regimes, like international society, states must have "established, by dialogue and consent, common rules and institutions for the conduct of their relations, and recognize their common interest in maintaining those arrangements" (330). Finally, the emphasis on perceptions specifically allows any examination of effectiveness to incorporate "consensual knowledge." As such, it attempts to account for E. Haas' research into regime decay, in which he asserts "regime effectiveness and coherence are associated with a small number of meta-issues around which *consensus* can be built" (1982, 233). Conversely, an issue area in which there is little to no consensus will produce a poor, ineffective regime.

While regime resilience is a supplementary concept in this research, it is useful to generate a definition, if this paper is to create a credible conjecture. Resilience is an aggregate measure of effectiveness over the lifetime of the regime. It is defined as "the staying power of international institutions in the face of exogenous challenges. By implication, it also comprises the extent to which prior institutional choices constrain collective decisions and behavior in later periods…" (Hasenclever, Mayer, and Rittberger, 1996, 3) This definition, while strong, is intended to capture the concept of resilience for all three schools of regime theory, and thus it lacks reference to the impact of perceptions and knowledge, as well as the potential for "learning." Resilience then,

tailored for a cognitivist argument, might be defined as *the staying power of the international regime as perceived by member states' policy makers based on its past effectiveness as well as the level of expectation among member states' policy makers for continued effectiveness in the near future.* This definition, along with retaining the dynamic nature of resilience as a concept, intends to simultaneously incorporate the concept of expectations in member states, as a facet of the overall definition of regimes.

3.3 Amalgamating the Theoretical Concepts

To conclude, the concepts discussed above must be assembled in order to obtain a clear conceptual picture on which this paper will rely to conduct an effective regime analysis of the Nuclear Non-proliferation Regime. First, a regime is defined by explicit or implicit principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue-area of international relations. Regimes are assessed in terms of their effectiveness. Regime effectiveness is, first, the extent that member state policy makers perceive that it is in the state's interests to abide by the regime's norms and rules in the issue area concerned. Second, it is the extent to which the regime achieves the objectives or purposes for which it was intended. Regime resilience is the staying power of the international regime as perceived by member states' policy makers based on its past effectiveness as well as the level of expectation among member states' policy makers for continued effectiveness in the near future. It is important to recognize that the policy makers' perceptions aspect of resilience is closely tied to effectiveness as perception of regime failure or its imminent failure can lead the state's policy makers to enact policies that initiate that failure.

Chapter 4: Defining the Non-Proliferation Regime

As asserted above, the first step towards assessing any regime is to define that regime. The general definition of international regimes[22] used in this research provides a foundation upon which to define a particular regime. To do so, this research will seek to identify the principles, goals, and issue area of the Nuclear Non-proliferation Regime, simultaneously identifying the implicit and explicit goals of the regime. First, the research will review the literature in order to identify pertinent agreements and organizations, as well as benefit from prior scholarship regarding the study's specific questions. Second, the research will review the pertinent agreements and organizational documents directly.

4.1 Literature Review: Standing on the Shoulders of Giants

Prior knowledge in any field of enquiry is something of a paradox in that it should be used as a springboard for further knowledge, but it should always be considered critically. This is the lesson expressed in Foucault's philosophical enquiries, E.H. Carr's histories, and Kuhn's scientific revolutions. Joachim Krause (2007a, 485) reminds readers that non-proliferation scholarship is no exception: like all scholarship, it is subject to the formation of *epistemes*.[23] Krause's writings present a strong 'jumping off' point to begin examining the Nuclear Non-proliferation Regime because he is critical of the mainstream understanding of the Regime, which he describes as "the Liberal Arms

[22] The consensus definition noted above, suggested by Krasner.

[23] Krause ultimately borrowed from Foucault, defines *episteme* as a 'dominant way of looking at social reality, a set of shared symbols and references, mutual expectations, and a mutual predictability of intention' (485).

Control" episteme (486). Krause's 2007a article is a particularly strong starting point because he lists some specific tenets, which he calls 'myths,' of the non-proliferation literature, and proceeds to critique each based on his own understanding.[24]

Krause contends there are three 'myths' held by the Liberal Arms Control episteme which are not only false, but also extremely damaging to the Non-proliferation Regime's goal of preventing the spread of nuclear weapons. The first tenet, or myth, he argues against is that the Non-proliferation Treaty is a disarmament treaty (486); rather, he suggests, the treaty is vague in its terms of disarmament and its division of nuclear 'haves' and 'have-nots' (489). Second, he argues against the implication among some scholars that the Regime has any connection to principles of 'managed nuclear deterrence,' instead asserting that such a concept would have spelt defeat for the United States during the Cold War (494). Finally, Krause contends that the Liberal Arms Control episteme maintains a myth that the Bush Jr. administration radically shifted U.S. non-proliferation policy (495).

Krause's final contention is probably the most salient as he provides solid evidence that Bush's policies were, in many ways, simply intensifications of Clinton policies.[25] However, his argument regarding the NPT and disarmament is heavily flawed, and the evidence he presents seems to contradict his argument. Furthermore, Krause's argument regarding 'managed nuclear deterrence' shows a lack of comprehensive understanding of nuclear strategy and its place in military strategy. Thus, while Krause

[24] Krause is critiquing the scholarship and beliefs of other academics featured in the same volume of *International Affairs*, (vol. 83, no. 3) particularly the assertions of William Walker, who presents to opening article.

[25] These policies include the Clinton 'counter-proliferation' policy, which Bush simply made more aggressive, and theatre missile defense system, which Bush expanded into a strategic missile defense system (496).

provides an elucidating introduction to the Nuclear Non-proliferation Regime and its scholarship, as well as a crucial caution to critically assess all scholarship, his assertions contain serious flaws, necessitating further exploration.

Krause serves as the contrasting view and intellectual opponent for William Walker. While Krause directly critiques Walker's 2007, *International Affairs* article, in which Walker essentially accuses the Bush administration of practicing a "counter-enlightenment" attitude towards the "nuclear order" (Krause, 2007a, 495). This "order," Walker argues, when reduced to its basics, consists of only two facets (Walker, 2000, 703). These facets, established through the NPT, consist of: a managed system of deterrence and a managed system of abstinence. The system of abstinence is defined by Walker as a system "whereby other states would give up their sovereign rights to develop, hold and use such weapons in return for economic, security and other benefits" (706). Such a system is straightforward to conceptualize and represents the entirety of the system as perceived by Krause.[26]

The managed system of deterrence concept is much more complex and controversial. Walker defines this facet of the system as one "whereby a recognized set of states would continue using nuclear weapons to prevent war and maintain stability, but in a manner that was increasingly controlled and rule-bound" (706). This facet of the system is not readily apparent on initial review of the NPT or its related agreements; however, it is an imperative and central aspect of the treaty. As will be discussed below, the NPT and

[26] One could also argue the U.S. Bush administration viewed the Non-proliferation Regime in similar terms.

the Non-proliferation Regime are at heart focused on international security,[27] identifying the spread of nuclear weapons as a threat to every state's national security and a threat to international stability in general. The treaty demonstrates a link between vertical proliferation, and hence disarmament as one end of the vertical proliferation spectrum,[28] and the nuclear weapons states' calculation of security and weapons strategy in relation to one another. This fact is played out in the Mutually Assured Destruction policies of the 1960's and is supported by quantitative research on nuclear weapons strategy and nuclear deterrence (see Powell, 1989).[29]

Walker's contribution is significant as it aligns with pertinent strategic studies scholarship, and it seems that his arguments are borne out by international developments. However, Walker heavily simplifies the foundations of the Non-proliferation Regime, as if he were assuming extensive prior knowledge of the regime and nuclear history. Furthermore, he heavily focuses on the weaponry aspect of the regime, and focuses little on the civilian-military link inherent in nuclear technology. Finally, Walker relies heavily on the NPT to arrive at his assessment of the Regime. While one might extract all of the Regime's basic principles from the NPT and it is widely recognized as constituting the backbone of the Regime, the treaty does not constitute the Regime's entirety.

[27] Krause would agree with this assertion (2007a, 406) and it is echoed in the much of the literature on the Regime as well.

[28] Nuclear arms racing would be the opposite end of the spectrum; vertical proliferation of nuclear arms might be best conceptualized in terms of Buzan's "Arms Dynamic" (Buzan, 1987).

[29] Herein lays the weakness of Krause's argument. Krause asserts that MAD was never a central aspect of US policy because if it had been, then the US would never have been able to deter a Russian incursion into Western Europe with its tactical nuclear capabilities. Krause neglects to recognize that MAD was wholly focused on strategic capabilities, embodied in the fact that the bilateral arms control treaties between the US and Russia barely mention tactical capabilities. Furthermore, deterrence and MAD are not military concepts, but political ones, in which a state must decide how much risk that tensions will spiral out of control it is willing to accept based on which interests are threatened. Thus, if the US considers an attack on its NATO allies an attack on itself (as stipulated in the NATO charter) then strategic deterrence, or MAD, is applicable in Western Europe.

Olav Njolstad's compilation, *Nuclear Proliferation and International Order*, is a multi-faceted assessment of the Nuclear Non-proliferation Regime. It is divided into four sections based on the four perceived basic threats to the integrity of the Non-proliferation Regime: threat of proliferation from NPT non-member states, threat of proliferation from NPT member states, threat of proliferation to subnational actors, and threat of nuclear weapons states not disarming. These threats are metaphorically considered to be from outside, within, below, and above (Njolstad, xi-xii). Each essay in the compilation addresses a particular problem or threat to the preservation of the Regime, such as the Israeli arsenal (outside threat; Said, 39), Iranian nuclear aspirations (inside threat; Lodgaard, 84), likelihood of violent subnational groups obtaining a weapon (threat from below; Maerli, 107), and the persistence of the US and Russia nuclear arsenals (threat from above; Halloway, 151; Dvorkin, 167).

Overall, the collection of essays has a number of benefits, as well as a number of serious flaws. A major benefit of the essays is their collective reference to numerous treaties and organizations that help constitute the core of the Non-proliferation Regime, such as the NPT, the IAEA, the IAEA Safeguards and Additional Protocol, the London Suppliers Group, and the GNEP. Furthermore, they demonstrate that the SALT, START, and ABM treaties are all linked to the Regime in both legal and security terms, which implicitly highlights the fact that managed nuclear deterrence is a facet of the Regime. The essays also identify a number of prominent specific threats to the integrity of the Regime and provide a wide range of perspectives regarding those threats. Finally, an important correlation that becomes apparent from reading all of the essays combined is

that in all of the cases where states have proliferated specific threats to national security are cited as justification for pursuing a 'nuclear option.'

For all of the strengths of the book, collectively the essays contain a number of serious flaws. First and foremost amongst those flaws is the clear tendency towards Idealism, particularly with regard to disarmament; such ideological orientation is plainly demonstrated in Njolstad's foreword and Hans Blix's introduction. A second flaw is that the 'managed nuclear deterrence' facet of the Regime is given little, if any regard; it is generally subsumed in the disarmament facet, and consequently its security implications are generally ignored.[30] This second flaw is linked to a general lack of security understanding, whereby strategic and military concerns are subsumed in idealistic goals and forgotten. Finally, many of the essays make reference to the civilian-military link in nuclear technology, but none thoroughly address the challenge of closing the peaceful use to proliferation loop. Whether that neglect is a result of ideological tendency to dismiss states' interest in a nuclear weapons option as fear mongering, or simply a lack of technical expertise is unclear; either way, it is a dangerous aspect of the Nuclear Non-proliferation Regime to neglect.

The final piece of literature that will be fully reviewed in the context of defining the Non-proliferation Regime comes from Harald Muller, translated in Hasenclever, Mayer, and Rittberger (1997, 9). In Muller's piece, he identifies four principles, nine norms, and specifies a number of agreements that form the Regime. His four principles are: proliferation of nuclear weapons brings about a higher likelihood of nuclear war,

[30] The lack of attention given to deterrence and its implications is endemic throughout the book, except in the very last essay which addresses Chinese nuclear weapons policy. The essay is very much focused on touting the attributes of the Chinese approach to nuclear weapons (which is ultimately very similar to other approaches), but its consistent reference to other arsenals in relation to the Chinese arsenal has a number of implications regarding the role of deterrence in the Non-proliferation Regime.

non-proliferation of nuclear weapons is not incompatible with the spread of nuclear technology, horizontal and vertical proliferation are inherently linked, and verification of adherence to norms is essential (9). Muller includes amongst the agreements that comprise the injunctions of the treaty: the NPT, the statute of the IAEA, the London Suppliers' Guidelines, the Safeguard Rules of INFCIRC 66 and 153, and the Rarotonga and Tlatelolco treaties (10). Overall, Muller's principles seem straightforward and considerable; however, upon review of the pertinent documents and in light of contrasting arguments, a different reality becomes apparent.

4.2 Incorporating the Documents: Identifying the Principles…

In 2009, the new U.S. President, Barrack Obama, delivered a speech in Prague, the Czech Republic, in which he outlined his policy perspective on nuclear weapons, nuclear proliferation, and the NPT. He asserted that: "The basic bargain is sound: countries with nuclear weapons will move towards disarmament, countries without nuclear weapons will not acquire them, and all countries can access peaceful nuclear energy" (Obama). While not posed in a very intellectual manner, President Obama's statement bears some consideration. In more academic jargon, specific to international relations and particularly international security studies, President Obama had asserted that the NPT and the Nuclear Non-proliferation Regime was comprised of three pillars:

1) Prevention of horizontal proliferation; (NPT, II)
2) Halt and reversal of vertical proliferation; (NPT, VI)
3) Uninhibited access to peaceful nuclear technology, on condition of safeguards. (NPT, III, IV, and V)

These could be considered the explicit principles of the treaty; they generally align with the scholarship reviewed above, but most importantly, they reflect both the injunctions of the NPT and the understandings expressed in the treaty's preambulatory clauses.

The third explicit principle often receives less analytical attention than the first two. Thus, the inquisitive reader might often read of an NPT "double bargain" (see Njolstad, i; Holloway, 151) referring to the horizontal and vertical proliferation facets of the NPT. The first principle is the principle of non-acquisition (Shaw, 45), Walker's 'system of abstinence (706), or prohibition of horizontal proliferation; that is,

> *Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.* (NPT, II)

As noted above, some consider this principle to be the only palpable principle of the Non-proliferation Regime, and it is certainly the least controversial.

The second principle receives less unanimity of interpretation. As seen above, Krause dismissed the disarmament principle, thereby rejecting that vertical proliferation is a facet of the NPT. However, the consensual understanding amongst scholars and most policy-makers is that the NPT includes an injunction to nuclear disarmament and that it is a central facet of the Regime. Specifically, Article VI of the NPT states:

> *Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.*

Again, some argue that such language is vague and leaves room for interpretation as to whether Nuclear Weapons states should disarm. However, the NPT Review Conference expounded upon the disarmament concept considerably, particularly in item two of the Final Document, stating:

> *The Conference recalls that the overwhelming majority of States entered into legally binding commitments not to receive, manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices in the context, inter alia, of the corresponding legally binding commitments by the nuclear-weapon States to nuclear disarmament in accordance with the Treaty.* (2)

Ultimately, it seems clear that the consensual understanding, with regard to the Non-Proliferation Regime, is that it does include a principle of halting and reversing vertical proliferation, even to the extent of complete nuclear disarmament.[31]

Despite the focus on proliferation in the Regime literature, the treaty is explicit in the open access term, and it is a critical norm for understanding the NPT regime. The treaty enshrines the universal right of signatory states to develop nuclear technology and capacity so long as it remains within the legal limits established by the treaty, meaning the safeguards which are established in Article III. Specifically, the treaty states that:

> *All the Parties to the Treaty undertake to facilitate, and have the right to participate in. the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also cooperate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.* (NPT, IV, 2)

This section of Article IV is critical because its language almost constructs an imperative for nuclear weapon states to aid non-nuclear weapon states in developing their own

[31]The principle of disarmament is further explored and institutionalized in the 13 Practical Steps of the 2000 NPT Review Conference (NPT/CONF.2000/28, 14-15).

peaceful nuclear programs. In addition, the section specifically mentions considering, with connotations indicating rather "favoring," the needs of the "developing areas of the world."

Yet, in as much as the treaty enshrines open access to peaceful nuclear technology, it also includes a safeguard aspect which is instituted by the treaty itself, and works in conjunction with IAEA regulations and adjunctive nuclear supply guidelines. IAEA information circulars 66, 153, and 540 (the Additional Protocols), along with the Safeguards System of the IAEA, address all aspects of the material and equipment which is to be monitored and safeguarded by the Agency in order to prevent diversion of materials from a peaceful to a military use. These standards and model agreements demonstrate the Agency's consideration that all materials related to nuclear technology pose a proliferation threat and should be monitored as such. The London Suppliers' Guidelines further contributes to this safeguard standard by creating a "trigger list" of proliferation sensitive equipment and tying trade in that equipment to the IAEA's pre-established safeguards (Goodby and McGoldrick, 41-42). Finally, the Global Nuclear Energy Partnership seeks to promote the spread of peaceful nuclear technologies that is both safe and proliferation resistant. The GNEP also might be considered something of a deliberate attempt to refocus or simply create a new nuclear *epistemic community*.[32]

As indicated above, the Nuclear Non-proliferation Regime includes a strategic security aspect and thus there is a fourth principle which is often overlooked, overemphasized, or misunderstood. This principle, discussed above, is Walker's 'managed nuclear deterrence' (Walker, 2000, 706). In some regards, it could also be

[32] As the GNEP (and its parent IFNEC) are relatively new to the Nuclear Non-proliferation Regime, they have not received much intellectual attention and as such there is little discussion regarding this author's claim.

considered as a 'balance of nuclear threat.'[33] This fourth, managed nuclear deterrence principle is essentially tied to the disarmament principle because no disarmament or arms control can take place without participating states making relative security and threat calculations as demonstrated in the SALT, START, and ABM treaties.[34] In fact, possibly the best expression of this understanding can be found in the U.S. Narrative describing the 1972 ABM (Anti-Ballistic Missile) Treaty between the U.S. and Russia:

> *In the Treaty on the Limitation of Anti-Ballistic Missile Systems the United States and the Soviet Union agree that each may have only two ABM deployment areas[35], so restricted and so located that they cannot provide a nationwide ABM defense or become the basis for developing one.* ***Each country thus leaves unchallenged the penetration capability of the others retaliatory missile forces.[36]***
>
> (U.S. Department of State, Narrative, A.B.M Treaty)

Unfortunately, the U.S. abrogated the ABM Treaty in 2002, indicating that then U.S. policy makers either no longer perceived that managed nuclear deterrence was an aspect of the Non-proliferation Regime, or they had no confidence in the effectiveness of the Regime. In any event, managed nuclear deterrence remains a central pillar of the Regime, and a crucial factor in assessing the Regime's effectiveness, as will be demonstrated below.

The subordination of the 'managed nuclear deterrence' principle to disarmament often results in it being disregarded, thereby ignoring the imperative of national security which must factor into any state's calculations regarding arms control. The imperative of

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[33] See Yunzhu as a demonstration of China's nuclear strategy calculations with regard to threat projection and defense.

[34] These are bilateral nuclear arms control treaties between the United States and Russia, covering mostly strategic arms reductions, as well as provision towards prohibition of a strategic missile defense system.

[35] This was subsequently reduced

[36] Emphasis added.

state security and the obligation of disarmament expressed in Article VI of the NPT combine to become the roots of this final principle. However, it is ultimately distinct from disarmament. Ultimately, this principle is often overlooked in the literature because it is not explicit in the treaty and few who assess nuclear proliferation seem to fully appreciate the strategic and military implications of nuclear weapons for international and national security. The remaining literature which does incorporate the 'managed deterrence principle' often overemphasizes its role in non-proliferation, arguably because strategic nuclear weapons[37] do have a profound impact on the international political landscape and because that principle receives so little analytical attention.

4.3 … and Identifying the Issue Area

What would seem to be the first task in defining any regime is identifying that regime's international relations issue area. Yet doing so is not a simple task of assessing regime relevant literature or a few documents; it requires gradually expanding the body of research and enquiry, to include a holistic perspective of the regime, as was attempted above. The literature on the Nuclear Non-proliferation Regime often seems to take an incomplete view of the regime's scope, generally excluding those aspects that are not always apparent or that fall outside of the reviewer's area of expertise. Consequently, it is often the case that assessments of the Nuclear Non-Proliferation Regime fail to address the entire scope of the Regime and its issue area and hence fail to adequately assess it.

[37] Emphasis must be placed on *strategic* nuclear weapons due to their ability for force projection and their role in serving state interests. Little is written in international relations literature of the difference between tactical and strategic nuclear weapons; that in spite of the fact that they have profoundly different security implications.

This paper seeks to fill the hole, or rather, failing, by incorporating a wholly inclusive view of the issue area by which to assess the Regime.

The growth and expansion of the Regime can be traced through a review of the international political agreements surrounding the spread and development of nuclear technology. Initially, as David Halloway notes, "neither Truman nor Stalin saw [i.e. perceived] the bomb as a common danger to be addressed by cooperative action" (152). The Baruch plan became the first attempt at a regulatory regime, focusing entirely on nuclear weapons regulation, with safeguards and inspections of peaceful nuclear sites (Blix, 3). The second attempt, "Atoms for Peace," also a U.S. endeavor, was more comprehensive and included regulations on peaceful technology, as well as peaceful use assurances (Eisenhower; Mian and Glaser, 42). The IAEA developed largely out of the U.S. desire to create a comprehensive safeguard regime, in order to prevent states from diverting peaceful nuclear endeavors to military uses. The IAEA was created with the stated objective to

> *…accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.* (Statute, II).

Thus, the IAEA represents the first applied international endeavor to draw a holistic link between the spread of peaceful nuclear technology and the danger of nuclear weapons proliferation, and then regulate that link (Blix, 4).

Ultimately, the scope of the Nuclear Non-proliferation Regime could be extracted from the terms of the Non-proliferation Treaty. As with the principles discussed above, the issue area may not be immediately apparent. The literature often argues that the treaty

takes a holistic approach to nuclear technology regulation, with emphasis on preventing horizontal proliferation and limiting vertical proliferation.[38] This broad scope is expressed explicitly and categorically in the NPT Articles I, II, and III. Yet, again, the treaty also inherently contains a strategic security facet and, as mentioned above, much of the literature neglects to address this crucial facet. By neglecting this crucial aspect of the treaty, literature that purports to analyze the Non-proliferation Regime neglects to include the implicit principle of deterrence and acceptable risk, which are central facets of nuclear strategy and *ipso facto* facets of nuclear security. On the other hand, while Krause and Walker address this aspect of the Nuclear Non-proliferation regime, they tend to either focus too much on deterrence or dismiss it entirely.

As argued above, the Nuclear Non-proliferation Regime is ultimately and wholly an international security regime, with grave implications for the national security of member states and international security as a whole. As described above, in many ways the Regime originated exactly as its name suggests: in order to prevent the proliferation of nuclear weapons. Indeed, Oran Young, in theoretical discussion of regimes in general, asserts that “nuclear proliferation is a regime issue area” (1991, 282). Yet, as demonstrated, the regime’s scope has grown drastically and ultimately has come to encompass all aspects of nuclear issues and technology. The growth and development of the regime is arguably a logical progression due to the nature of nuclear technology, the risks that arise from its peaceful use, inescapable nuclear weapons proliferation concerns, and the international security implications of the existence of said weapons. Thus the Non-proliferation Regime’s international relations issue area, its “whole,” to use E. Haas’

[38] Horizontal proliferation is defined as the spread of nuclear weapons capability to states previously not possessing it. Vertical proliferation is defined as the growth of existing nuclear weapons arsenals. See: Buzan, 1987, 57.

terminology (1975b), is everything nuclear related, including nuclear weapons strategy, nuclear weapons proliferation, and nuclear technology trade. To emphasize, the implication is that anything that affects nuclear strategy, including deterrence, also has an impact on proliferation concerns.

4.4 Conclusion: Principles, Issue Area, and Consequent Goals

To conclude, this section set out to identify the principles, goals, and issue area of the Nuclear Non-proliferation Regime. It identified four principles that comprise the Regime, including three principles explicitly conveyed in the treaty, and a fourth implicitly created by a combination of the treaty's injunctions and inevitable state security imperatives. These principles are:

1) non-horizontal proliferation implying voluntary non-acquisition;
2) halting and reversing vertical proliferation, eventually leading to disarmament;
3) open access to peaceful nuclear technology, conditional to safeguards and verification of non-diversion to military use; and,
4) managed nuclear deterrence and balance of threat.

From these four principles, the goals of the regime become apparent. The first goal is encapsulated in the regime's name in that it seeks to prevent nuclear weapons proliferation, both vertical and horizontal. The second is to regulate the use of nuclear technology while keeping its potential benefits open to all states, recognizing that the spread of the technology is probably inevitable. Finally, and most encompassing, the Regime's goal is to mitigate and manage the possible threat to international security and stability posed by nuclear technology in general, and weapons specifically.

The Regime's principles address all nuclear related concerns, including nuclear weapons and all aspects of nuclear technology and its regulation. Furthermore, the goals

of the regime indicate that the regime encompasses the whole of nuclear related issues, particularly if one considers that the regime is intended to mitigate and manage the possible threat to international security posed by nuclear technology. Thus, the issue area of the regime is anything that falls in the nuclear field.

One final note must be given to consensual understandings regarding the Regime. In order to measure consensual understanding of meta-issues within the regime, it is necessary to define those meta-issues. Simply, the principles discussed above essentially outline the meta-issues that comprise the Regime. If one considers the holistic issue area of the Nuclear Non-proliferation Regime to be everything related to nuclear technology and weaponry, and that "whole" is comprised of interrelated principles, then those principles are necessarily the Regime's meta-issues. It is important to recognize that those meta-issues are interrelated meaning that anything which effects one meta-issue will have consequences for another. It is this interrelation which might explain Muller's "principles of the Non-proliferation Regime" which were discussed above (Hasenclever, Mayer, and Rittberger, 1997, 9-10). Muller's principles do not seem accurate, *per se*, in describing the Non-proliferation Regime; however, they do seem to accurately describe some aspects of the nature of the connection between the various meta-issues that comprise the regime.[39] In conclusion, it would seem that maintaining consensual understandings of the principles, and therefore meta-issues, that comprise the Nuclear

[39] That is, not the totality of the connections. The connections, or interrelations, Muller notes are: proliferation of nuclear weapons leads to a higher likelihood of nuclear war, spread of nuclear technology does not necessarily mean proliferation of nuclear weapons, horizontal and vertical proliferation are intimately linked, and there must be a verification mechanism to prevent states from diverting peaceful nuclear endeavors towards military uses. The underpinning link, however, is that, unmanaged, nuclear technology ultimately represents a potential threat to all states.

Non-proliferation Regime, is directly linked to the effectiveness of the Regime as a whole.

Chapter 5: The Hypothesis

5.1 Postulations Necessary for Application

Before generating concrete hypotheses, a few general postulations regarding international regimes must be made explicit. First, if a regime achieves its aims and goals, it can be considered effective, while if fails to achieve its aims and goals it is automatically ineffective. It is also possible for there to be varying degrees of effectiveness in this regard. Second, if a member state's policy makers perceive violating the regime is in their best interest, then the regime can be considered ineffective. This can happen either because policy makers perceive that the aims and goals of the regime are contrary to the state's interests, or because they perceive more gain by violating the regime and the regime's institutions are incapable of preventing violation. Either event indicates regime ineffectiveness.

Resilience, as opposed to effectiveness, is a dynamic concept. It incorporates institutional history (Hasenclever, Mayer, and Rittberger, 1996, 3) because it must account for the historical effectiveness of the regime, as well as the potential for "learning." Drawing from Oran Young (1982, 291-294), a number of separate postulates can be made about resilience. First, regimes often harbor internal contradictions, which can lead to lower resilience as those contradictions become more prominent. This postulation reflects E. Haas' concept of regime "coherence" (1982, 193). Second, power distribution can undermine regime resilience if a powerful member state loses influence. Third, resilience is demonstrated through the effect of "exogenous forces" and new developments on the ability of member states' policy makers to incorporate those forces while abiding by the regime's principles and norms. If new developments or exogenous

forces lead to states changing behavior in the regime issue area, then the regime may not be resilient. Finally, and most importantly, the regime *episteme* can be a profound indicator of the regime's future. If the *episteme* has a low influence, it may indicate policy makers "learning" away from the consensus understanding, thereby undermining current resilience and negatively impacting future effectiveness.

5.2 General Hypothesis

Following from the weak cognitivist theory discussed above, consensual understanding is possibly the most crucial element in the construction of a regime and its perseverance. Thus, following from E. Haas (1982, 233), a regime is effective to the extent that member states' policy makers perceive state interests in terms of a consensual understanding regarding the regime's issue area and its meta-issues. In other words, *in a regime with an issue area comprised of multiple meta-issues, if member states' policy makers practice the consensual understanding of the various meta-issues then the regime is effective.*

Resilience, then, as essentially a dynamic measure of effectiveness, must be highly dependent on consensual understanding as well, which lends itself to the concept of coherence of regime principles and norms (E. Haas, 1982, 193). Furthermore, as noted above, resilience must be flexible to outside concerns and issue area developments. Finally, as regimes are constructed around an issue area, the prevailing beliefs and theories about that issue area as demonstrated through its epistemic communities have a profound impact of that regime's resilience. Therefore, a regime might be said to be resilient in so much as its member states' policy makers' beliefs are influenced and

informed by the regime relevant *epistemic communities*, which assumes that a coherent view is within each of those epistemic communities. In other words, *in a regime with an issue area comprised of multiple meta-issues, if member states' policy makers perceive that the regime has been effective and their policies are influenced and informed by the regime relevant epistemic communities, then the regime is resilient.*

5.3 Operationalization

In order to effectively apply the theoretical concepts and variables discussed above to an assessment of the Nuclear Non-proliferation Regime, the concepts must be operationalized. The variables, in order to become effective tools by which to assess concepts, must be made measurable to the extent possible. The primary abstract concept to be assessed is the *regime effectiveness*. The variable to be measured for effectiveness is *degree of consensual understanding* between states' policy makers surrounding the regime's *meta-issues* which were ultimately determined to be reflective of the regime's principles. In order to determine the degree of consensus between state policy makers, this research will utilize the NPT Review Conferences from 2000, 2005, and 2010, as well as UN Security Council Resolution 1887 (2009) as expressions of the consensus understanding. The research will then compare some particular state policies over the past decade, from the beginning of the 21st century, to those consensus agreements as an indicator of the degree to which that consensus is held by particular policy makers.

Briefly, regarding resilience, this is a more difficult concept to measure because it incorporates both the past and the expected future of the regime's effectiveness. However, the potential for "learning" can be a crucial consideration for regime resilience

because it embodies a more dynamic view of the consensual understandings that comprise the regime. If policy makers "learn" new beliefs about regime meta-issues, and undertake policies that align with those new beliefs, then not only is regime effectiveness diminished, but regime resilience is negatively impacted as well. Furthermore, as noted above, *epistemes* play a central and sometimes even causal role in preserving the consensual understandings which preserve a regime. Thus if there is divergence amongst the regime relevant *epistemes* or if there is strong normative divergence between state policy makers and the regime's *epistemes* then the regime may not be expected to retain a strong consensual agreement in the future regarding its meta-issues. Overall, then, resilience of the regime is strongly linked to the level of influence of the regime relevant *epistemes*. In order to assess this link, this research will review a wide range of literature regarding the various meta-issues of the regime and compare the *epistemic communities'* analyses to the policies enacted by member states. One final note must be made for the influence of particular, powerful states in a regime. The Nuclear Non-proliferation Regime is often considered to be underpinned by the United States (Levite, 59-60, 75-76); as such that state has a higher proportional influence over the resilience of the regime with regard to learning, thus particular attention will be placed upon U.S. "learning" in order to generate this paper's conjecture.

5.4 Operational Hypotheses

Having operationalized the variables and concepts, an operational hypothesis is now possible. Regime effectiveness is the degree to which state policy makers practice the consensus understanding across the regime's various meta-issues. The consensus

understanding of the meta-issues within the Nuclear Non-proliferation Regime in the 21st century is represented by the 2000, 2005, and 2010 NPT Review Conferences, as well as the UN Security Council Resolution 1887. Additionally, the regime relevant epistemic communities are those that inform and analyze the particular meta-issues; influence by these communities, as noted above, and following Adler and P. Haas (384), assumes a relatively coherent set of beliefs and understandings within the community.

The implication of the postulations and the general hypothesis expressed above is that international regimes are not effective necessarily based on their own terms. Rather, regime effectiveness depends on the degree of consensus around meta-issues in that regime, the consensual and shared understanding that there is a common concern amongst regime member states and there is a shared understanding regarding the method to address that shared concern. In other words, international regimes are not founded on convergence of interest; they are founded on convergence of beliefs. Furthermore, even the most technically effective enforcement mechanism in a regime might be practically ineffective in the case of a lack of agreement regarding the nature of the problem addressed, or a lack of consensus surrounding the method to address that problem. Thus, this research suggests that the effectiveness of the Nuclear Non-proliferation Regime, or any regime, is not to be measured by its ability to enforce itself. Rather, it should be measured based on its ability to retain consensus amongst its member states' politicians regarding it issue area, and more precisely its underlying meta-issues.

5.4.1 Hypothesis:

In the Nuclear Non-proliferation Regime which regulates all international nuclear concerns, as comprised of four principle based meta-issues,[40] *if member states' policy makers' policies align with the consensual understandings surrounding the various meta-issues as expressed through the 2000, 2005, and 2010 NPT Review Conferences and the UNSCR 1887, then the regime is effective.*

[40] Those are, as mentioned above: prevention of horizontal proliferation, halt and reversal of vertical proliferation, open access to peaceful nuclear endeavors conditional upon safeguards, and managed nuclear deterrence.

Chapter 6: Assessing Effectiveness

As discussed above, regime effectiveness is reflected by the tendency of state policy makers to implement policies that align with the consensus understanding of the regime's meta-issues. If a certain state's policy makers implement a contending policy in a particular meta-issue, in other words a policy that is based on beliefs other than those implicit in the consensual understanding, then the consensus around the meta-issue is weakening. If numerous states are enacting unilateral policies which contend with the consensual understanding, then the consensus around the meta-issue is shown to be diminishing, or even disintegrating. Even if all of the meta-issues demonstrate weakened consensus, then the regime might be considered weakly effective. However, because all of the meta-issues are interrelated, if consensus around one meta-issue begins to disintegrate, then the regime might be considered weakly effective, and if more than one, the regime itself may be disintegrating.

6.1 Identifying the Consensus Understanding

The first step in order to compare individual state policies to the consensual understandings surrounding the meta-issues is to identify and conceptualize those understandings. As noted above, this research, with its focus on the 21st century, will primarily utilize four forums, held by credible international bodies, which are intended to bring consensus around the whole of the Nuclear Non-proliferation issue area. These are: the 2000 NPT Review Conference, the 2005 NPT Review Conference, the 2010 NPT Review Conference, and the 2009 UN Security Council Resolution 1887. Other

documents and agreements will be considered as well, as supplementary to the four primary agreements listed above.

6.1.1 The 2000 Review Conference

The first review conference of the new millennium was the 2000 Review Conference of the Parties to the Treaty on the Non-proliferation of Nuclear Weapons, which ostensibly should have set the path forward at the beginning of the 21st Century. This research will draw from the final document produced by the conference, as the document summarizes the findings and recommendations for all topics considered in the review (NPT/CONF.2000/28 I&II). The review is divided by the article of the NPT being reviewed, with each article receiving numerous points of analysis and critique. Ultimately, the purpose of reviewing this document is to assess the overarching consensus understandings with regard to the principles discussed above.

The first section addresses the workings of articles I and II of the NPT, specifically those articles stating that non-nuclear weapon states will not acquire nuclear weapons and that nuclear weapon states will not transfer them to a non-nuclear weapon state (NPT, I- II).[41] Overall, this section of the document contains three important assertions. The first is that the purpose of the treaty, put simply, is ultimately to prevent the proliferation of nuclear weapons without hampering the spread of peaceful uses of nuclear energy (NPT/CONF.2000/28 I&II, 2). Second, the legal commitment of non-nuclear weapon states (NNWS's) not to acquire nuclear weapons was made *"inter alia"* the corresponding legal commitment of nuclear weapon states (NWS's) to nuclear

[41] Note: A legal "nuclear-weapon state is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January, 1967" (NPT, IX. 3).

disarmament. Finally, the document criticizes both India and Pakistan for conducting nuclear weapons testing and strongly affirms that *de facto* nuclear weapon status does not grant legal nuclear weapon state status.[42] The corresponding commitments between NWS's and NNWS's mentioned in the document highlights the consensus understanding that both vertical and horizontal proliferation are linked.

Article III of the NPT, the article which places the safeguards conditions on peaceful nuclear endeavors under authority of the IAEA, receives extensive attention in the 2000 Review Conference final document. First, the section affirms that the IAEA retains the confidence of the parties and, further, strongly recommends that members accept the IAEA Additional Protocol,[43] allowing the IAEA to conduct more intensive and intrusive inspections (NPT/CONF.2000/28 I&II, 3). The section also directly addresses the Democratic People's Republic of North Korea, in regards to its failure to allow full inspection of its nuclear material. Also significant, the section directly "calls on member states to not cooperate or give assistance in the nuclear field to non-parties [to the NPT]." Furthermore, the section notes the link between "dual-use" technologies, affirms their pertinence to the non-proliferation system, and urges for complete transparency in business and supply of such technologies (NPT/CONF.2000/28 I&II, 7).

In addressing Article IV, the document underscores the fact that the Non-proliferation Regime is truly comprehensive in its influence over nuclear technology as a whole. The section first emphasizes that nothing in the treaty should be interpreted as

[42] Both India and Pakistan conducted nuclear weapons tests in late spring of 1998.

[43] The Additional Protocol model agreement is detailed in the IAEA INFCIRC 540. It expands IAEA safeguard capabilities, allowing the IAEA greater access on shorter notice to more facilities, increasing the chance the IAEA would catch material being diverted from peaceful uses. This protocol arose out of the IAEA experience in Iraq, in 1991, in which it was discovered that Iraq had an extensive nuclear weapons program, without any IAEA awareness.

limiting parties' right of access to the full scope of peaceful nuclear technology NPT/CONF.2000/28 I&II, 8). It also underscores the role of the IAEA in assuring that peaceful use equipment and materials are not diverted to weapons making, within the framework of open access to technology. More importantly, and again underscoring the comprehensive scope of the Regime, the document addresses issues of nuclear safety and links the NPT to a number of international conventions which focus on safety standards and physical protection measures (NPT/CONF.2000/28 I&II, 9).

Article V receives very little attention in the document; however, the section dedicated to Article VI becomes possibly the most important section and definitely the most widely referenced. First the section emphasizes the consensual belief that eliminating nuclear weapons is imperative for the long term maintenance of international peace and security (NPT/CONF.2000/28 I&II, 13). The section continues and explicitly presents what are known as the 13 Practical Steps towards disarmament. The majority of the statements and steps would seem rather obvious, in that they deal with confidence building measures, transparency, dialogue, and reporting. The emphasis given to disarmament measures underscores the consensual understanding that disarmament is a central facet of the treaty. Additionally, the seventh proposed step contains a reference to the ABM Treaty and the necessity for the NWS's to retain "strategic stability" (NPT/CONF.2000/28 I&II, 14-15). Thus, the principle of "managed deterrence" gains explicit acknowledgement in the consensual understanding.

The final sections, reviewing NPT Articles VII – X, contain little pertinent to the whole scope of the Regime. However, the document does discuss and applaud achievements in arranging Nuclear Weapon Free Zones, and security assurances by

NWS's to NNWS's (NPT/CONF.2000/28 I&II, 15). Finally, the document specifically names Israel as the obstacle in the way of achieving an NWFZ in the Middle East, and one of the obstacles to achieving international universality of the NPT.

6.1.2 The 2005 Review Conference

The five years between the 2000 and 2005 review conferences were pivotal in shaping the 21st Century international political arena. The U.S. presidential administration which took office in early 2001 brought in policies and policy makers which were distinctly more militant towards nuclear weapons, particularly with regard to the U.S. nuclear deterrence capabilities, nuclear weapons technology, and ballistic missile defenses.[44] The events of September 11, 2001, had a defining impact on the beginning of the century as well and while those events served to redefine the threat environment and refocus it towards sub-state actors, they also had implications for non-proliferation as well. Furthermore, in 2002 the Bush administration abrogated the ABM Treaty and began unilaterally pursuing a national missile defense system, ostensibly with concerns about "rogue states" (Blix, 8; Holloway, 157; see also, Powell, 2003, 86). This action, obviously, had and continues to have serious implications for the managed deterrence facet of the regime. Finally, concerns arose about Iraq attempting to restart is weapons program,[45] about Iran's equivocation regarding its safeguard obligations, and about North Korea's withdrawal from the NPT.

[44] Many of the key policy makers from this era had come out of the Neoconservative movement and the Project for a New American Century think tank. The member of this think tank made clear their views in an open letter to President Bill Clinton, prior to the election of President George Bush, stating the need for the United States to prepare to defend its interests against a new major enemy, such as a resurgent Russia.

[45] Of course, the outcome of this concern is well known. The invasion of Iraq by U.S. forces in March of 2003 led to the rapid disintegration of the Iraqi regime. However, no nuclear weapons and no evidence of a

As a result of the sea changes in the international arena, the 2005 NPT Review Conference had numerous issues to address regarding each of the principles of the Regime. The issues were divided into three different Main Committees, each of which were to review particular documents and produce a consensus document with analyses and recommendations (NPT/CONF.2005/DEC.1). The documents reviewed spanned various topics and were prepared by various states. One notable example of a report is that which was submitted by the Islamic Republic of Iran (NPT/CONF.2005/4). In the report Iran argues that it has abided by its responsibilities under the NPT, however the NWS's have not abided by their disarmament obligations and that the United States in particular has done much to undermine the Regime by expanding the role of nuclear weapons in its security strategy.

Ultimately, the 2005 NPT Review Conference was an abject failure. Main Committee I was tasked with reviewing Article VI and devising recommendations. Surprisingly, it arrived at a consensus document and exhorted the NWS's to try to restrict their nuclear use policies, to eliminate their arsenals in their entirety, and to refrain from developing new types of nuclear weapons (NPT/CONF.2005/MCI/1). The document also ties disarmament to reducing the threat of sub-state acquisition of nuclear weapons. The achievement of a consensus document in this particular committee is surprising because many observers would have expected the United States to block any consensus agreement regarding Article VI, particularly considering the U.S. Security Strategy of 2002 and the U.S. abrogation of the ABM. Yet, it was Main Committees II and III which were unable to produce a consensus document, thereby causing the failure of the Review Conference.

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nuclear weapons program were found. Ironically, North Korea, which did have nuclear weapons, was not invaded, leading some to suggest that the lesson that arose out of the Iraq invasion was simply: nuclear weapons equals security (Sigel, 69; drawing on the North Korean statement of withdrawal from the NPT).

It is important to note two points from the 2005 Review Conference, in spite of its failure. The first is that a consensus was made regarding Article VI, in which member states reaffirmed their belief that the NWS's had an obligation to disarm. The second is that, according to many observers of the Conference, the two key players or member states that effectually orchestrated the failure of the conference, and thus the production of a consensus document, were the United States and Egypt (Johnson, 1-2). It would seem that such a failure would signify death for the Non-proliferation Regime, particularly considering the issues and problems faced by the Regime at the time. However, while it is undeniable that the Regime took a severe blow to its effectiveness as a result of the near disintegration of consensus around its issue area, the Regime received a boost upon the change in U.S. Presidential administrations in 2009.

6.1.3 UN Security Council Resolution 1887

This paper quoted U.S. President Obama from a speech delivered in Prague in 2009 in which he demonstrated his outlook on nuclear weapons. This outlook is a severe divergence from his predecessor's policies, and one that aligns closer with the consensus understanding. President Obama's expressions were put in practice later in 2009 when he personally chaired a seminal meeting of the United Nations Security Council, in which the Council arrived at a unanimous passage of Resolution 1887 (S/RES/1887 (2009)). To many, this event was so seminal because it became a symbol of U.S. departure from its previous unilateral approach to international policy, and specifically a departure from the Bush administration's militaristic approach to nuclear weapons policy (Blix, 9-10).

The UNSCR 1887 itself, when viewed in its entirety, would not be particularly striking compared to other NPT documents because it reaffirms many of the beliefs and principles asserted in the 2000 NPT Review Final Document. It is interesting to note, however, that the resolution's first preambulatory clause emphasizes that a world without nuclear weapons is necessary for sustained international peace and security, and that achieving such an end must be done in a way that *maintains international stability* (S/RES/1887 (2009), 1). Implicitly, once again, this affirmation gives substance to the managed deterrence principle contained in the Non-proliferation Regime. Another clause underscores that principle by specifically identifying both nuclear weapons *and their means of delivery*, meaning ballistic missiles, as threats to international peace and security. Finally, the preambulatory clauses reaffirm that the Final Documents of the 1995 and 2000 Review Conferences act as baselines upon which the Non-proliferation Regime should continue to grow (2).

The operative clauses of UNSCR 1887 substantiate the reversion to the consensual understandings of 1995 and 2000, with some additions to scope and focus. One notable addition is the increased emphasis on sub-state actors (read: terrorist groups) acquiring a nuclear weapon and using it. Thus, the Resolution exhorts states to accede to relevant conventions regarding nuclear safety and physical protection, as well as conventions designed to help limit illicit nuclear trafficking (S/RES/1887 (2009), 6). Additionally, whereas during the period between 2001 and 2009, it is thought that consensus often broke down with regard to states having the right of full access to nuclear technology, the UNSCR 1887 reestablishes that right as a central aspect of the treaty (S/RES/1887 (2009), 3-4). Yet, the treaty also places increased focus on the

proliferation concerns that accompany the spread of sensitive nuclear equipment, thus is calls on exporters to put heightened scrutiny on their exports as well as clauses in their nuclear cooperation agreements which essentially punish NPT non-compliance (S/RES/1887 (2009), 4). Finally, the Resolution places added emphasis on states that are not in compliance with their obligations under the NPT and their IAEA safeguard agreements, asserting that the benefits which come with the NPT are only available conditional to compliance with the treaty.

Overall, the UNSCR 1887 was a revitalizing step for the Non-proliferation Regime. The Regime relevant episteme had felt that U.S. policies at the outset of the 21st Century were setting a course which would lead to the disintegration of the Non-proliferation Regime (Blix, 8-9; Walker, 2000, 724; Krause, 2007b, 496). While on the surface, the Resolution would not seem to be anything too seminal in itself, especially when compared to the products of the 2010 NPT Review Conference, it was still arguably a necessary document to help prepare for the 2010 Conference. The UNSCR 1887 reaffirms the original consensus understandings of NPT member states and laid the groundwork for the 2010 Conference to continue building off of the 2000 Final Document.

6.1.4 The 2010 NPT Review Conference

On the conclusion of the 2010 Review Conference, in New York City, which had succeeded in adopting an extensive Final Document, most of the delegates present broke into applause (Johnson, 1). The conference had managed to produce a 63 point action plan to move towards achieving the goals of the NPT and maintaining the Non-

proliferation Regime. Additionally, the two states that had played key roles in preventing consensus in the previous review conference (in 2005), the United States and Egypt, were considered the two biggest consensus builders in 2010 (4). On the other hand, the Islamic Republic of Iran was considered to be the state most interested in preventing consensus (4). While some onlookers were ultimately unimpressed by the content of the 2010 Final Document, indicting it for its failure to address some of the most contentious issues of the preceding decade (8), the document does represent a useful tool for understanding the consensus understandings in the nuclear issue area.

The first half of the 2010 NPT Review Conference Final Document Volume I (NPT/Conf.2010/50 (Vol I)), grants some credence to the disappointments expressed over the results of the conference. In large part, Part I of the Final Document, known as the Review of the Operation of the Treaty, seems to be a carbon copy of the 2000 Review Conference Final Document. Many of the same beliefs and understandings expressed in the earlier document find their way into the 2010 Final Document, sometimes being expressed with the exact same wording. However, despite the similarities in the two documents, which do not necessarily bode ill for the Regime, there are significant additions and changes as well.

First, in the review of Articles I and II, the Conference expressed and emphasized that each of the principles of the Regime are interdependent; thus, a breach in one principle fundamentally affects the others (NPT/Conf.2010/50 (Vol I), 8). Additionally, the Article III review places stronger emphasis on the proliferation concerns inherent in sensitive equipment and also exhorts member states to conclude Additional Protocol agreements with the IAEA (4). The Article IV review affirms that the developing world

should be given preferential treatment with regards to nuclear cooperation (6), which, while not a new interpretation, is a consideration that is rarely explicitly expressed. Furthermore, the Article IV section ties certain civil society organizations, such as G4F and IFNEC, to the Non-proliferation Regime, and lauds their attempts at creating a consensus path for future nuclear development (9). Finally, the 2010 Final Document adds significant emphasis on nuclear safety and security, thereby further integrating any safety and security regime into the wider Non-proliferation Regime (9-11). It is important to note at this point, the section covering Article VI review contained no significant divergences from the principles expressed in earlier documents, essentially implicitly indicating that little has changed regarding disarmament since 2000.

The second half of the Final Document, Volume I, consists of the Conclusions and Recommendations of the Conference. These are broken into three sections, based on the three explicit "pillars" of the Regime: Disarmament, Non-proliferation, and Peaceful Uses of Nuclear Energy. Within each of these sections, a list of basic understandings and goals is expressed, followed by a list of practical actions that should be implemented to achieve those goals. In total, 63 separate actions are proposed in order to achieve the Regime's goals.

First, under "Disarmament," the beliefs expressed reaffirm that stability should be of paramount consideration, again reasserting the managed deterrence principle. The proposed actions are, to a certain extent, common sense progressions from the 13 Practical Steps of 2000, however there are many more affirmations of the desirability of transparency, and an assertion that *all* types of nuclear weapons should be included in

arms control negotiations.[46] In addition, the action plan proposed in the 2010 Final Document is much more detailed and explicit regarding the necessary steps towards disarmament than any previous agreement.

Second, under the “Non-proliferation” section, the action plan includes a new level of emphasis on sensitive technologies which can easily be put to use in developing a nuclear weapons program. The proposals include more involvement by the IAEA, more technical developments for monitoring and verification, and heightened scrutiny by exporting states to states newly developing civilian nuclear programs. However, despite the new degree caution towards sensitive technologies, the action plan reemphasizes the international commitment to open access when states are fully in compliance with their NPT treaty obligations. Finally, as noted in the UNSCR 1887, a new focus has been placed on the possibility of sub-state actors acquiring a nuclear weapon, and thus the action plan includes a few exhortations for NPT member states to accede to pertinent, anti-terrorism conventions.

The third and final section addresses the Peaceful Uses of Nuclear Energy. The very first assertion in this section is that states should respect each other’s rights and nuclear sovereignty. The second reaffirms that states which are in compliance with their IAEA and NPT obligations are entitled to the fullest possible exchange of technology. The action plan continues, reasserting that the IAEA is the competent body to prevent diversion of peaceful endeavors and further asserting that countries should eliminate “undue transfer constraints” with regard to technology (Action 51). Finally, the section

[46] That is, most prior arms control treaties had only addressed strategic nuclear weapons without addressing tactical nuclear weapons. Arguably this neglect of addressing tactical nuclear weapons was in the primary interest of the United States, as tactical nuclear weapons played a central role in U.S. deterrence strategies towards the Soviet Union in Europe (Krause, 494).

concludes by further tying nuclear safety and security standards to the Non-proliferation Regime.

6.2 Summarizing the Consensus

This research has sought to identify the consensus understandings surrounding the principles of the Nuclear Non-proliferation Regime by examining the primary consensus agreements of the first decade of the 21st Century. While the majority of the decade was spent with little to no consensus, and a large fear that the Regime was disintegrating, the past two years have done much to recover what seemed to have been lost in the early part of the century, with some additions to address new concerns. From examining the documents listed above, this research has identified a number of understandings that are central to the Regime.

1. *Disarmament:*
   a. *The Nuclear Weapon States do have a legal obligation to disarm, a commitment made inter alia the obligation for Non-weapon States to refrain from acquiring them.*
   b. *Disarmament talks must proceed in degrees and be accompanied by verification as well as an IAEA role in overseeing the management of fissile material.*
   c. *The Comprehensive Test Ban Treaty is necessary step towards disarmament.*
   d. *All types of weapons must be addressed, including tactical nuclear weapons.*
2. *Non-proliferation*
   a. *The NPT must achieve universality.*
   b. *The horizontal proliferation of nuclear weapons ultimately poses a common threat to all states.*
   c. *The IAEA is the competent authority for verifying adherence to NPT obligations, and they are the authority which should advance specific proliferation concerns.*
   d. *International standards are sufficient to prevent nuclear terrorism, as long as those standards are implemented in various states.*
   e. *An individual state's proliferation concerns alone are not enough to restrict access to technology.*
3. *Peaceful uses of nuclear energy*
   a. *Every country's nuclear sovereignty must be respected.*

b. *An individual state's proliferation concerns are not enough to restrict access to technology.*[47]
c. *Multilateral fuel supply is desirable, and should be pursued, but it is not imperative for the spread of peaceful nuclear technology.*
d. *IAEA non-compliant states should not receive any level of nuclear cooperation which might potentially assist them in a weapons program.*
e. *States must implement adequate nuclear safety standards and share best practices and experience (*now especially through 'civil society' organizations).*

4. *Managed Nuclear Deterrence (in the agreements known as "International Stability")*
   a. *A balance of threat is a central facet of the nuclear order; thus, anything that undermines the balance of threat also undermines the Regime.*
   b. *Reductions in arsenals can only proceed in an environment of maintaining international stability.*

6.3 Determining Effectiveness: Surveying State Policies

Having determined the primary "consensual understandings" about the meta-issues of the Non-proliferation Regime, it is possible to quickly determine the regime's effectiveness. As mentioned above, two states or more engaging in policies that diverge from the Regime's consensus around a meta-issue demonstrates a disintegrating effectiveness. On the other hand, one state diverging from the consensus demonstrates only a weakened effectiveness regarding that meta-issue. Finally, while all of the meta-issues may reasonably demonstrate weakened effectiveness, demonstrating the Regime itself to be weak, if more than one meta-issue consensus understanding begins to disintegrate, then the Regime may be experiencing broad ineffectiveness and consequently may be disintegrating.

The first meta-issue is Disarmament. This area is specific to the NWS's and thus their movements in the meta-issue define the adherence to the consensus. There are five legal nuclear weapon states (NPT, Preambulatory Clauses). However, while the policies

[47] This point is repeated because it technically falls under both sections, and it is repeated under both sections of the 2010 Final Document.

of all five states have a bearing on the Disarmament principle, the two primary nuclear weapons states, the United States and Russia, have the greatest amount of impact, as each of their arsenals number in the thousands. Overall, considering the unilateral and bilateral policies being enacted by the two states, as well as the policies being enacted by the other weapons states, it does seem that the disarmament principle may be relatively effective. First, the entry into force of the New START (Strategic Arms Reduction Treaty) on February 5, 2011 (U.S. Department of State, New Start), demonstrates a level of commitment by both states to the disarmament principle. In addition, unilateral U.S. actions to make public the size of the U.S. nuclear arsenal and the 2010 Nuclear Posture Review, which reduced the role of nuclear weapons in U.S. security strategies, further demonstrate commitment and build confidence (Norris and Kristensen, 2010b, 57 and 59).

The other three legal nuclear weapon states, the United Kingdom, France, and China, have also demonstrated varying degrees of commitment to disarmament. China has consistently maintained what it considers a “minimum deterrence” level in its arsenal, ostensibly to ensure that China is not “blackmailed” (Yunzhu, 249) by potential enemies. Furthermore, China has consistently maintained a “No First Use” policy (249), maintaining that the “atom bomb is a paper tiger” (Jian, 228). The United Kingdom has not only followed the Disarmament principle, but has arguably been a forerunner in setting the Disarmament standard by committing itself to a Fissile Material Cut-off Treaty, a minimum deterrence policy, and negotiating an Additional Protocol agreement with the IAEA (Walker, 2011, 202). Finally, while France has expressed numerous reservations to disarming and the elimination of its nuclear deterrent, it has nevertheless

maintained a minimum deterrence policy, a small nuclear arsenal, and that arsenal is expected to shrink (Norris and Kristensen, 2010a, 78). Ultimately, the three minor NWS's together maintain approximately 640 operational nuclear warheads, amounting to less than 10% of the combined operational nuclear forces of the United States and Russia (78).

The Non-proliferation principle is the second meta-issue of the overall Regime. Extensive discussion could be placed around this meta-issue because there are many facets, as demonstrated above. However, as asserted, more than one state diverging from the consensus understanding demonstrates a disintegrating consensus around the meta-issue, and unfortunately the Non-proliferation principle seems to be experiencing a loss of consensus. Regarding "universality" of the NPT, three states remain outside of the party members and all three have either openly "proliferated" or maintain an official "ambiguity policy" despite concrete evidence to their presence (Kapur, 13; Chakma, 26; Said, 39). While it is arguable whether the three non-member states, Israel, India, and Pakistan, represent a break of consensus as they have never been party to the consensus, it is undeniable that their example has damaged the Non-proliferation principle (Kapur, 22-23).

In addition to the external threat to the Non-proliferation principle, arguably a greater threat comes from the outside. The first is certainly from North Korea, which withdrew from the NPT in 2003, declared itself a nuclear weapon state in 2005, and tested its first nuclear explosion in 2006 (Sigal, 65-66). In withdrawing from the NPT, North Korea cited pressing security concerns, which were inflated by the then U.S. administration's overtly hostile policies and explicit desire for "regime change" (66).

However, whatever the cause, the withdrawal signifies that North Korean policy makers "learned" new beliefs, in that they changed their view that Non-proliferation was in common international interest. The second outstanding threat to the Non-proliferation principle is Iran. Some contend that Iran has not made overt signals that it will proliferate and that concerns as such are overblown; however, Iran has consistently refused to abide by its full obligations and declarations with the IAEA (Lodgaard, 85). Furthermore, it was discovered that Iran had been conducting clandestine enrichment at an undeclared facility, to produce highly enriched uranium far in excess of its research reactor requirements (97-98). Ultimately, whether Iran seeks to develop nuclear weapons or not, its noncompliance with IAEA safeguards serves as a challenge to the Regime (NPT/CONF.2010/50, 5).

The third principle, or meta-issue, is the Peaceful Use principle, which asserts that all states should have open access to peaceful uses of nuclear technology. Regarding sensitive equipment, equipment which can serve both peaceful and military functions, such organizations as the Nuclear Exporters Committee and the Nuclear Suppliers Group serve to reduce proliferation fears while maintaining that open access principle (Tate, 404). Additionally, safety and security conventions, which are widely ratified and accepted as part of the Regime, as well as the IAEA Code of Conduct, help secure the spread of nuclear energy by standardizing the industry ("The Bulletin Interview: Richard Meserve," 4-5).[48] Furthermore, multilateral fuel enrichment facilities, such as that being

[48] Briefly, these conventions include: The Convention on Nuclear Safety, the Convention on Early Notification of a Nuclear Accident, the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Convention on the Physical Protection of Nuclear Material, the Code of Conduct on the Safety and Security of Radioactive Sources, the Code of Conduct on the Safety of Research Reactors, the Guidance on the Import and Export of Radioactive Sources, and the International Convention for the Suppression of Acts of Nuclear Terrorism.

developed in Russian territory, provide unprecedented oversight over the process to create fuel for peaceful uses, further entrenching the open access norm while circumventing proliferation fears (Goodby and McGoldrick, 45). Finally, “civil society” organizations such as the Generation IV Forum and the International Framework for Nuclear Energy Cooperation help generate consensus about new technologies that are safe, efficient, secure, and proliferation resistant (Introduction to Generation IV Nuclear Energy Systems and the International Forum, 6; IFNEC, Statement of Mission).

The above evidence might lead one to conclude that the Peaceful Use principle is strong in the Regime. However, one state in particular stands out as diverging from the overall principle, despite its adherence and support for many of the above endeavors: the United States. The first consensus understanding from which the United States has diverged is that of the nuclear non-commerce with states that do not comply with IAEA safeguards. In concluding a Nuclear Cooperation Agreement with India, the United States has gone against Nuclear Suppliers Guidelines and implicitly violated the above principle (Kapur, 23; Mian and Glaser, 47). Second, the United States has consistently begun to pressure states, particularly in the Middle East, with which it is conducting nuclear negotiations to renounce their right to enrichment and reprocessing facilities (Goodby and McGoldrick, 43; Luck, “Jordan, U.S. Nearing Nuclear Deal”). This goal the United States has pursued in spite of clear and explicit exhortations in the 2010 Final Document to the contrary, and in spite of much opposition in the issue area’s epistemic community (McGoldrick, 7).

The fourth and final principle is the Managed Deterrence principle, which is implicit and arises from a balance of the disarmament principle and pervasive security

concerns. This principle receives some expression in the consensus documents as "international stability" (NPT/Conf.2010/50 (Vol I), 19) which those document consistently stipulate must be maintained in conjunction with disarmament measures. This principle also receives implicit expression through the ABM Treaty, as well as explicit expression in the U.S. Department of State interpretation of that Treaty (Bureau of Arms Control, Verification, and Compliance, "Narrative of the ABM Treaty"). Throughout the Cold War, as might be understood in the introduction to this research, this precarious principle was maintained despite the fears that the tensions between U.S. and the Soviet Union would break into open nuclear conflict.

Yet once again, United States' policies arise as the primary threat to this Managed Deterrence principle. As noted at the beginning of the U.S. Department of State narrative on the ABM Treaty, the United States announced its intention to withdraw from (read: abrogate) the Treaty on December 13, 2001. The United States then openly began pursuit of a national missile defense program, ostensibly to counter the threat from "rogue states" (Powell, 2003, 86).[49] As demonstrated in this paper's review of Joachim Krause and William Walker, this decision was met with enormous criticism from the Non-proliferation Regime epistemic community. More importantly, arguably, the decision was met with open hostility from both Russia and China, as it appeared to be a thinly veiled attempt to negate their respective deterrent capabilities (Dvorkin, 176; Yunzhu, 258). Thus, by beginning to unilaterally pursue policies which undermine this critical principle, the United States has broken from the consensus understanding, directly weakening

[49] The official assertion that the NMD program is intended to counter threats from "rogue states," such as North Korea, Iran, and pre-2003 Iraq, is often thought to be disingenuous. While the official announcements by the U.S. Presidential administration claimed that Iran and North Korea are the primary concerns, then Secretary of Defense, Donald Rumsfeld, was known to consider a rising China or a resurgent Russia to be of greater concern.

Regime effectiveness in the deterrence meta-issue, and indirectly affecting the disarmament process. Furthermore, the United States intends to continue to pursue these policies (U.S. Department of Defense, 11-13 and 47).

6.4 Summary Results for each Meta-Issue

This section of the research has sought to apply a weak cognitivist based operationalized approach to measure the *regime effectiveness* of the Nuclear Non-proliferation Regime. In doing so, it has tried to define the Regime as a whole by its overall issue area and then subsequently demonstrate that whole can be divided into four meta-issues. Each of these meta-issues are necessarily interlinked as aspects of the same regime, and thus the Regime's overall effectiveness can only be assessed by examining all four meta-issues together. However, it is first necessary to assess each meta-issue discretely, which has been the purpose of this section of the research.

Regarding the Disarmament principle and its attendant meta-issue, this research focused on the five nuclear weapon states and their policies in comparison to the consensus understandings determined above. Overall, this research has concluded that under the specific and discrete area of disarmament the five nuclear weapons states have enacted policies which generally align with the consensus agreements. While they have done so slowly and haltingly, particularly considering the U.S. administration between early 2001 and early 2009, the NWS's are not currently diverging significantly from the disarmament consensus understandings. This conclusion runs counter to many of the epistemic community regarding the issue, which often indicts the NWS's for being too

slow in upholding its end of the NPT bargain (Njolstad, xii). Thus, the Disarmament principle, while it may have required revitalization, retains a relatively strong consensus.

Regarding the Non-proliferation of nuclear weapons principle, this research drew from a number of examples of non-compliance with the consensus understandings, along with supporting analysis from the epistemic community. The consensus around physical security of nuclear materials is strong, and essentially all states seem determined that nuclear weapons in the hands of sub-state actors is contrary to all states' interests. However, the three remaining NPT non-member states are persistent in remaining outside of the treaty, and all three have nuclear weapons capability. Additionally, North Korea has withdrawn from the NPT and demonstrated itself to be nuclear weapons capable. Finally, Iran, while maintaining that its program is entirely peaceful, is no longer in compliance with its IAEA obligations and has been obfuscating on everything from nuclear facilities to fissile material production. Thus, four of the five levels of understanding within the Non-proliferation meta-issue are being broken by one or multiple states. Therefore, this research concludes that the overall consensus understanding around the Non-proliferation of nuclear weapons meta-issue is disintegrating. This conclusion is supported by relevant, quantitative studies specifically regarding proliferation and its determinants (Jo and Gartzke, 181-187; Singh and Wray, 882).

Regarding the open access to peaceful use of nuclear energy, or just "peaceful use" principle, this paper examined primarily examined NPT member state practices and compared them to the consensus understandings. As demonstrated through the numerous agreements, organizations, practices, and even some select individual treaties, this

principle retains a majority support in NPT member states' policy makers. However, the one significant exception is the United States. The United States has diverged from two aspects of the consensus understanding. First, the United States has concluded a nuclear cooperation deal with India, which will ultimately indirectly allow India more of a margin to develop its nuclear weapons program, by directly aiding its civilian nuclear program. Second, the United States has pursued "undue constraints" in its nuclear cooperation agreements, most palpably with Jordan and the United Arab Emirates. Thus, this research concludes that the consensus around the peaceful use principle is weakened, but not falling apart. This conclusion is in line with the determinations of pertinent scholars, both on the technical side of the nuclear industry, as well as the policy side (McGoldrick, 7; Lewis, 13; Neureiter, 23; Goodby and McGoldrick, 43; "The Bulletin Interview: Richard Meserve," 8).

Finally, regarding the Managed Deterrence principle, more official expressed euphemistically as "international stability," this research relied on comparing the consensus understanding to states' policies and perceptions. As argued above, the principle is grounded in the balance between pervasive state security concerns and the explicit Disarmament principle; thus, when the consensus documents express that all disarmament steps must be taken in a manner that preserves international stability, this principle is given tacit acknowledgement. Furthermore, the ABM treaty was a cornerstone of this principle, acting as a tangible product of its existence. The United States stands out as the only state whose policy has diverged from this consensus understanding in its abrogation of the ABM treaty and continued pursuit of a ballistic missile defense system. Thus, this meta-issue retains broad acceptance in the Regime,

however the divergence of one state, particularly one as influential as the United States, demonstrates a weakened level of effectiveness. This conclusion is supported by a broad degree of the literature pertinent to the issue (Walker, 706; Dvorkin, 174).

6.5 Conclusion: The Effectiveness of the Nuclear Non-proliferation Regime

The determinations of this research are mixed and the above discussion could be interpreted in a number of ways. In the consideration of this research, only one of the four meta-issues which comprise the Nuclear Non-proliferation Regime is in a strong condition, that of the Disarmament principle. That determination does not align with the opinions and expressions of much of the Regime pertinent epistemic community. Two of the meta-issues, those of peaceful use and managed deterrence, are in a weakened condition; largely through the policies being pursued by one particular state. Finally, the non-proliferation meta-issue is arguably experiencing a disintegrating consensus because there are four out of principles to which numerous states are no longer adhering.

Does this state of affairs indicate that the Nuclear Non-proliferation Regime is disintegrating? In light of the hypothesis, this research considers the answer to be negative. Considering the hypothesis of this research, the Nuclear Non-proliferation Regime may not yet be determined to be disintegrating, but rather may be showing signs of serious decay. While the non-proliferation aspect of the Regime is arguably the most fundamental principle, all of the principles are interrelated. Thus the general maintenance of consensus in most of the meta-issues, though maybe weak, seems to indicate that the Regime is still viable overall, though with a demonstrably weakened effectiveness.

Chapter 7: Conclusion- Supposition and Recommendation

It seems, as argued above, that the Nuclear Non-proliferation Regime is arguably under severe threat to its integrity; however, it is not yet disintegrating. Of four primary meta-issues, three could be considered to be in an “unhealthy” state. The Disarmament principle, in disagreement with the arguments of much of the Idealist literature,[50] seems to be the only “healthy” principle of the four, as it relies primarily on the policy steps of the five official nuclear weapons states, and of those, primarily upon Russia and the United States. The Non-proliferation principle is the only principle of the four which seems to be experiencing a near disintegration in its application and consensus, as Iran, North Korea, Israel, Pakistan, and India have all successfully obtained nuclear weapons. Furthermore, quantitative analysis has demonstrated the probability that any “non-proliferation norm” alone is weak to the point of statistical insignificance. Just as significantly, the Peaceful Use principle, allowing open access of nuclear technology to NPT compliant states, and the Managed Deterrence principle, keeping the balance of threat between nuclear weapon states, are both currently being violated by the United States. Thus, overall, the Nuclear Non-proliferation Regime currently has a *weak effectiveness.*

7.1 Conjectures for Resilience

Resilience is a difficult variable to measure in any degree in regime analysis, and it goes beyond the theoretical scope of this paper. However, despite the difficulty and lack of firm theoretical foundations, it seems pertinent for future application to at least

[50] By Idealist literature, the author is referring to literature that demonstrates a bent towards the classical international Idealism school.

make a conjecture as to the future of the Nuclear Non-proliferation Regime. As this research is rooted in the practice of diplomacy, rather than in theoretical general framework of international relations, this imperative becomes even stronger.

Regime resilience is the regime's "staying power" (Hasenclever, Mayer, and Rittberger, 1996, 178) or its "robustness" (1997, 2). Resilience is reflective of the regime's degree of institutionalism, meaning the level to which an international institution "matters" in international politics and practice, and to what degree will those institutions continue to constrain the choices of policy makers in the future. Thus, an implicit indication is that the perceptions of policy makers that the Regime is still viable are an important factor. In other words, if a member state's policy makers perceive the Regime to be weak, then they may enact policies which they feel are designed to cope with a weakened Regime, but which in actuality hasten or even cause that Regime's decay. Another pertinent factor not often found in regime literature is the *will* of policy makers to perpetuate the regime in question. In other words, how important is the goal of the Regime?

Unfortunately, as stated above, the factors that might potentially build a solid theoretical foundation for regime resilience is beyond the scope of this research. Thus, this paper can only produce an informed supposition based on the assessed effectiveness, the regime relevant literature, and a general sense gathered from primary documents and statements made by policy makers. This paper does not claim to approach regime resilience as a theoretical concept from an entirely theoretically sound approach, but rather from one of conjecture.

Ultimately, this paper suggests that the Nuclear Non-proliferation Regime has a moderate level of resilience. While the regime effectiveness is currently weak, a number of factors indicate it may yet recover and become more effective. First and foremost is the overwhelming perspective that the goals of the Nuclear Non-proliferation continue to be relevant: preventing the spread of nuclear weapons, ensuring access and safety in nuclear technology, and overall mitigating the potential threat posed by nuclear technology to international peace and security.[51] The second factor that leads this research to believe that the Regime is moderately resilient is the continued and even increasing strength of the Regime in areas such as safety and sound practices. The recent case of the Fukushima disaster is demonstrative of the level of international involvement and the degree of recognition that nuclear issues are rarely, if ever, limited to solely one state. Finally, this research considers the regime to have a moderate level of resilience due to the ability to change the rules and norms of the regime without changing its principles. Specifically, the Managed Deterrence principle does not necessarily require that the NWS's must leave each other's "penetration capabilities" unchallenged (ABM Treaty, Narrative), it simply implies that one should not be able to attack the other without fear of reprisal. Thus, the rules of the regime can change, while still maintaining the integrity of the principles.

While the above mentioned factors speak much for the continued resilience of the Regime, its concurrent weak effectiveness necessarily speaks to some threat to its resilience as well. Ultimately the underlying issue is arguably: what constitutes the

[51] This prevalent perception is expressed in instances such as President Obama's Prague address, the 1887 UNSC Resolution, the 2010 Review Conference Final Document, multiple NCA's such as that between Russia and Australia, and most of all through the continued writings of the Nuclear Non-proliferation Regime relevant epistemic community.

underlying threat? Certainly if member states continue to implement policies that diverge from the Regime consensus and refuse to realign their policies to reflect the consensus understandings, they effectually undermine the Regime's resilience. Furthermore, if a member state enacts a policy which will permanently undermine or outright violate one of the Regime principles, then it could potentially destroy any level of Regime resilience. Thus, Iran continuing to be non-compliant with its IAEA obligations detracts from the Regime's future viability. Likewise, the United States continuing to enact policies which seem to assume the impending disintegration of the Regime acts as a catalyst bringing about that disintegration.

Thus, again, considering the currently weak effectiveness of the Regime as well as the potential for change and the continued perception that the Regime's goals are essential for the maintenance of stability in the international political arena, this research considers the Nuclear Non-proliferation Regime to be moderately resilient.

7.2 Recommendations

The Nuclear Non-proliferation Regime is a broad regime. As determined above, its "issue area" extends to anything pertinent to nuclear issues.[52] The Regime's overarching goal is the mitigation and management of the potential threat to international peace and stability posed by the inevitable spread and application of nuclear technology. This goal indicates that, at heart, the Nuclear Non-proliferation Regime is an international security regime; thus, policy makers and academics alike should consider it as such.

[52] For this reason, that is the interrelated concerns that tie nuclear technology, its spread, and its use together, the author would argue that the Nuclear Non-proliferation is improperly named. The Non-proliferation title allows and even fosters too narrow of a perspective in assessing the Regime's effectiveness and resilience.

This research ultimately aligns with the previous determinations of a number of scholars. First, this research considers that the United States plays by far the most prominent part in the sphere of nuclear concerns (Levitz, 86). However, this research would argue that given the security concerns of current proliferation threats, as well as the direct threats to the integrity of the Regime posed by the U.S., the U.S. serves as the single largest factor leading to the current level of the Regime's decay. Quantitative research shows that persistent security concerns are the single largest contributor to nuclear proliferation (Singh and Wray, 882; Jo and Gartzke, 169-170), thus any policy which serves to threaten a potential proliferator will likely only serve to exacerbate, rather than mitigate the proliferation threat. As Singh and Wray clearly assert,

> *There are no cases of the determined pursuit of a nuclear weapon by countries not experiencing a subjectively threatening security environment. Given this fact, one has to question the wisdom of policies aimed at countering proliferation that may well increase the subjective insecurity of incipient proliferators.*
>
> (882)

This argument is given credence by the statement given by North Korea upon its withdrawal from the NPT in 2003, which asserted that U.S. policies, particularly under the Bush Administration, threatened North Korea's basic security (Sigel, 65, 69).

First and foremost, United States policy makers need to recognize the overwhelming evidence that nuclear proliferation is primarily driven by security concerns. Thus "militarism and threats seem to exacerbate proliferation" (71) and "policies aimed at graduated reduction of threat would seem to be more productive" (Singh and Wray, 883). It is significant to note that the same quantitative analyses which found the security environment to be a large factor contributing to proliferation also found that high economic interdependence significantly reduced that threat. Additionally,

assuming states which display “revisionist” tendencies[53] as simply “morally wrong, or aggressive by definition” (Buzan, 1983, 177) or even as “evil,” [54] leads to the fact that they may have legitimate security concerns being ignored.

Second, United States policy makers need to realize that the National Missile Defense project receives a high level of criticism from all directions, including the academic community as well as foreign policy makers and that there is a legitimate reason for this criticism. From the part of academia and deterrence theory, NMD not only poses a threat to “international stability” as expressed in the Review Conference documents, but it may even intensify the nominal “rogue state” threat (Powell, 2003, 110-113). On the other hand, if the project of creating a missile defense shield were to be made a joint, international effort, involving at least the other nuclear weapon states, if not more, then the project may gain immense credibility and support. This type of project would necessarily have to be placed under an international monitor and not be subordinate to any single state.

Third, United States diplomats and foreign policy makers also need to recognize that the peaceful use principle of the Nuclear Non-proliferation Regime is regarded as being tied to nuclear sovereignty. States which are in compliance with the NPT and under good regard by the IAEA should be aided in developing their nuclear programs, and, as asserted multiple times in the 2010 Review Conference Final Document, should have undue trade constraints lifted. There is a wealth of pessimistic literature which cries all new states seeking their own civilian nuclear program are in actuality seeking nuclear weapons (Salama and Weber, 44, is just one example). Yet none of that literature is

[53] Revisionist as explained by Barry Buzan in *People, States, and Fear*, 176-177.

[54] This in reference to the U.S. President Bush State of the Union address in 2002.

supported in any sense by quantitative or qualitative research, and thus amounts to mere conjecture. However, there is clear evidence that United States' policies attempting to limit partner states' access to enrichment and reprocessing technology places strains on those partnerships. Ultimately, United States' policies regarding nuclear cooperation and concerns about access to sensitive technologies needs to give way to trusting the mechanisms of the Non-proliferation Regime (i.e. the IAEA) (McGoldrick, 7).

Ultimately this paper aligns with the conclusion that the Nuclear Non-proliferation Regime is undergoing a "Crisis of Confidence" (Lewis). Its effectiveness is currently weak because the majority of its principles are not being respected by one or more member states. While the United States cannot bear all culpability in the decay of the Regime, other states do necessarily bear some, the United States stands out as having direct or indirect links to all of the major threats to the Regime's integrity. Thus, the United States also has the greatest amount of power to reverse the process of decay and revive the Nuclear Non-proliferation Regime. As Jeffery Lewis argues,

> *The crisis confronting the NPT is not so much one of compliance but one of confidence- confidence on the part of the U.S. and other countries that non-proliferation has a future…The belief that the Non-proliferation Regime is falling apart thus becomes a self-fulfilling prophecy, fostering the very policies that contribute to its unraveling.*
>
> (13 and 15)

Lewis continues by asserting "we do have a choice: we can devise novel forms of cooperation to address [the] challenge, or we can simply throw up our hands in despair." The unsaid implication behind Lewis' statement is that throwing up our hands in despair ultimately leads to taking up arms in violence.

References

2000 Final Document (Parts I and II). New York: United Nations General Assembly, 2000. (Npt/Conf.2000/28)

2010 Final Document. New York: United Nations General Assembly, 2010. (Npt/Conf.2010/50 (Vol. I))

"**The Atomic Energy Act of 1954**." *919*. United States: U.S. Statutes at Large 30 August 1954.

"**Agreement between the Government of Australia and the Government of the Russian Federation Regarding the Use If Nuclear Energy for Peaceful Purposes**." 2007/28 ed2007 of Australian Treaty Series.

Agreement for Cooperation between the Government of the United States and the Government of India Concerning Peaceful Uses of Nuclear Energy: U.S. Department of State, 2007. (NCA between the U.S. and India)

Allocation of Items to the Main Committees of the Conference. New York: United Nations General Assembly, 2005. (Npt/Conf.2005/Dec.1)

Ballistic Missile Defense U.S. Department of Defense, 2010.

Final Report of the Preparatory Committee for the 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. New York: United Nations General Assembly, 2004. (Npt/Conf.2005/1)

Implementation of Article VI: Report Submitted by the Islamic Republic of Iran. New York: United Nations General Assembly, 2005. (Npt/Conf.2005/4)

"Interview: Mohammed Elbaradei." **Bulletin of the Atomic Scientists** (September/October 2009)

Introduction to Generation Iv Nuclear Energy Systems and the International Forum: Generation IV International Forum, 2008. (Introduction to Generation Iv Nuclear Energy Systems and the International Forum). **http://www.gen-4.org/**

"Iran's Nuclear Program Sparks Nuclear Arms Race Throughout the Arab, Muslim World." **The Israel Project** (April 2010). 28 November 2011 **http://www.theisraelproject.org/site/c.hsJPK0PIJpH/b.6149513/k.6109/Iran8217s_Nuclear_Program_Sparks_Nuclear_Arms_Race_Throughout_Arab_Muslim_World.htm**

"It Is 5 Minutes to Midnight: Confronting Nuclear Energy's Proliferation Problems." **Bulletin of the Atomic Scientists** (March/April 2009): 1-3

New Start: U.S. Department of State, 2011. (New Start). **http://www.state.gov/t/avc/newstart/index.htm**

Report of Main Committee I. New York: United Nations General Assembly, 2005. (Npt/Conf.2005/Mci/1)

Report of Main Committee II. New York: United Nations General Assembly, 2005. (Npt/Conf.2005/Mcii/1)

Report of Main Committee III. New York: United Nations General Assembly, 2005. (Npt/Conf.2005/Mciii/1)

Resolution 1887 (2009). New York: United Nations Security Council, 2009. (S/Res/1887 (2009))

Statement of Mission. Accra: International Framework for Nuclear Energy Cooperation, 2010.

"The Bulletin Interview: Sergio Finardi." **Bulletin of the Atomic Scientists** (2007): 20-25

Abdullah bin Zayed Al Nahyan, Kamal J. Al Araj, Nabil Fahmy, and Somporn Chongkum. "Why Go Nuclear?" **Bulletin of the Atomic Scientists** 64.4 (2008): 14-19

Adler, Emanuel, and Peter M. Haas. "Conclusion: Epistemic Communities, World Order, and the Creation of a Reflective Research Program." **International Organization** 46.1 (1992): 367-90

Development, Organization for Economic Cooperation and. Agency, Nuclear Energy. **Reference Values for Nuclear Criticality Safety** 2006.

Amawi, Dala. "Director of the Department of International and Bilateral Cooperation, Jordan Atomic Energy Commission, Personal Email Communication." Ed. Author. Amman. 2011.

Andreas Hasenclever, Peter Mayer, and Volker Rittberger. "Interests, Power, and Knowledge: The Study of International Regimes." Mershon International Studies Review 40.2 (Oct. 1996): 177-228. **http://www.jstor.org/stable/222775**

---. **Theories of International Regimes**. Cambridge Studies in International Relations. Vol. 55. Cambridge:Cambridge University Press, 1997.

Anthony Froggatt, Doug Koplow, Michael Schneider, and Steve Thomas. "2009 World Nuclear Industry Status Report." **Bulletin of the Atomic Scientists** (November/December 2009).

Arnaudo, Rose Gottemoeller and Raymond. "Agreeing to Disagree on Nuclear Rights." **Bulletin of the Atomic Scientists** (November/December 2008).

Bernard Gourley, Adam N. Stulberg. "It Is 5 Minutes to Midnight, Nuclear Energy Development: Assessing Aspirant Countries." **Bulletin of the Atomic Scientists** (2009).

Blix, Hans. "Introduction: Nuclear Proliferation and Internatioanl Order." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 1-10.

Broinowski, Richard. **Fact or Fission?: The Truth About Astralia's Nuclear Ambitions**. Carlton, North Victoria, Australia:Scribe Publications Pty. Ltd., 2003.

Burr, William. "A Brief History of U.S.- Iranian Nuclear Relations." **Bulletin of the Atomic Scientists** (2009): 21-34.

Bureau of Arms Control, Verification, and Compliance. **Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems (Abm Treaty)**: U.S. Department of State, 1972. (Abm Treaty). http://www.state.gov/t/avc/trty/101888.htm

Buzan, Barry. **People, States, and Fear**. Chapel Hill, North Carolina:The University of North Carolina Press, 1983.

---. **An Introduction to Strategic Studies**. London:The MacMillan Press LTD, 1987.

---. "From International System to International Society: Structural Realism and Regime Theory Meet the English School." **International Organization** 47.3 (1993): 327-52. **http://www.jstor.org/stable/2706979**

Combs, Jeff. "Uranium Markets." **Bulletin of the Atomic Scientists** (2008): 48-51.

Dixon, Martin. **Textbook on International Law, 4th Ed**. London:Blackstone Press Ltd., 2000.

Dvorkin, Vladimir. "The Nuclear Policy of Russia and the Perspectives for Nuclear Disarmament." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 167-77.

Einstein, Albert. Ed. Roosevelt, Franklin D.: **http://www.AtomicArchive.com**, 2 August 1939.

Eisenhower, Dwight. "**Atoms for Peace**." Ed. Assembly, United Nations General. New York, 8 December 1958.

Fitzpatrick, Mark. "Will Nuclear Energy Plans in the Middle East Become Nuclear Weapons Strategies?" **International Relations** 22 (2008). **http://ire.sagepub.com/content/22/3/381.citation**

Forsberg, Charles. "It Is 5 Minutes to Midnight, the Real Path to Green Energy: Hybrid Nuclear-Renewable Power." **Bulletin of the Atomic Scientists** (November/December 2009).

Frisch, Otto R. and Lise Meitner. "Disintegration of Uranium by Neutrons: A New Type of Nuclear Reaction." **Nature** 143 (1939).

Gilinsky, Victor, and Roger Mattson. "Revisting the Numec Affair." **Bulletin of the Atomic Scientists** (2010): 61-75.

Goodby, James, and Fred McGoldrick. "Reducing the Risks of Nuclear Power's Global Spread." **Bulletin of the Atomic Scientists** 2009 (2009): 40-47.

Gowa, Joanne. "Rational Hegemons, Excludable Goods, and Small Groups: An Epitaph for Hegemonic Stability Theory?" **World Politics** 41.3 (April 1989): 307-24. **http://www.jstor.org/stable/2010502**.

---. "Bipolarity, Multipolarity, and Free Trade." ***The American Political Science Review*** 83.4 (December 1989): 1245-56. **http://www.jstor.org/stable/1961667.**

Greene, Michael. "The Science of Mid-East Peace." **Bulletin of the Atomic Scientists** 63.4 (2007): 60.

Grieco, Joseph M. "Anarchy and the Limits of Cooperation." **International Organization** 42 (1988): 485-507.

Haas, Ernst B. "Is There a Hole in the Whole? Knowledge, Technology, Interdependence, and the Construction of International Regimes." **International Organization** 29.3 (1975): 827-76.

---. "On Systems and International Regimes." **World Politics** 27.2 (1975): 147-74.

---. "Why Collaborate?: Issue Linkage and International Regimes." **World Politics** 32.3 (1980): 357-405.

---. "Regime Decay: Conflict Management and International Organizations." **International Organization** 37.2 (1982): 189-256.

Haas, Peter M. "Introduction: Epistemic Communities and International Policy Coorodination." **International Organization** 46.1 (199): 1-35.

Halloway, David. "The United States and the Npt "Double Bargain"." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 151-66.

Henry A. Kissinger, William J. Perry, George P. Shultz, and Sam Nunn. "Ending the Threat of Nuclear Arms." **International Relations**.1 (30 January 2007).

Hinman, Richard. "(Deputy Political Counselor, U.S. Embassy- Amman)." Ed. Author. Amman. 27 September 2010.

Hoffert, Martin. "Duly Noted." **Bulletin of the Atomic Scientists** 63.1 (2007): 14.

Horovitz, Liviu, and Robert Golon-Vilella. "Boosting the CTBT's Prospects in the Middle East." **Bulletin of the Atomic Scientists** (2010).

International Atomic Energy Agency. "**Statute of the International Atomic Energy Agency**." New York, 23 October 1956.

---. "**Treaty on the Non-Proliferation of Nuclear Weapons**." Information Circular, 22 April 1970.

Jian, Chen. "Departing Revolution." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 227- 47.

Johnson, Rebecca. "Assessing the 2010 Npt Review Conference." **Bulletin of the Atomic Scientists** (July/August 2010).

Joseph S. Nye, Jr. "Approaches to Nuclear Proliferation Policy." **Science** 256.5061 (1992): 1293-97.

Kapur, S. Paul. "The Indian Nuclear Program." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 13-25.

Kennedy, John F. "Zero Tolerance." **Bulletin of the Atomic Scientists** 63.1 (January/ February 2007): 84.

Kerr, Christopher Blanchard and Paul. **The United Arab Emirates Nuclear Program and Proposed U.S. Nuclear Cooperation**: Congressional Research Service 10 March 2009. (The United Arab Emirates Nuclear Program and Proposed U.S. Nuclear Cooperation).

Krasner, Stephen. "Structural Causes and Regime Consequences." **International Organization** 37.2 (1982): 185-205.

Krause, Joachim. "Nuclear Proliferation and International Order: The Reform of the Non-Proliferation Regime." **Global Security in the 21st Century: Perspectives from China and Europe**. 2007. **http:www.iwep.org.cn**

---. "Enlightenment and Nuclear Order." **International Affairs** 83.3 (2007): 483-99.

Levite, Ariel. "Never Say Never Again: Nuclear Reversal Revisited." **International Security** 27.3 (2002-2003): 59-88.

Lewis, Jeffery. "A Crisis of Confidence." **Bulletin of the Atomic Scientists** 63.1 (2007): 13-15.

Lodgaard, Sverre. "Challenge from Within." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 84-103.

Long, Whitney Raas and Austin. "Osirak Redux? Assessing Israel's Capabilities to Destroy Iranian Nuclear Facilities." **International Security** 34.4 (2007): 7-33.

Luck, Taylor. "Jordan, Japan to Ink Nuclear Deal This Weekend." **The Jordan Times** 8 September 2010.

---. "Jordan Can Lead Region in Nuclear Safety." **The Jordan Times** 9 September 2010.

---. "Jordan, Us Nearing Nuclear Deal." **The Jordan Times** 10 September 2010.

---. "Kingdom Enters Second Stage of Talks over Nuclear Plant." **The Jordan Times** 13 September 2010.

Lyman, Edwin S. "Can Nuclear Plants Be Safer?" **Bulletin of the Atomic Scientists** 64.4 (2008): 34-37.

Maerli, Morten Bremer. "The Threat of Nuclear Terrorism." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 107-26.

MAUD Committee. "**Report by Maud Committee on the Use of Uranium for a Bomb**." Atomic Archive (1941). 1 January 2011. **http://www.atomicarchive.com/Docs/Begin/MAUD.shtml**

McGoldrick, Fred. "The U.S.-U.A.E. Peaceful Nuclear Cooperation Agreement: A Gold Standard or Fool's Gold?" **Policy Perspectives** (30 November 2010).

Mian, Zia, and Alexander Glaser. "A Frightening Nuclear Legacy." **Bulletin of the Atomic Scientists** 64.4 (2008): 42-47.

Mitchell, Ronald. "Sources of Transparency: Information Systems in International Regimes." **International Studies Quarterly** 42 (1998): 109-30.

Mueller, John. "The Atomic Terrorist." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 127-48.

Nadelmann, Ethan A. "Global Prohibition Regimes: The Evolution of Norms in International Society." **International Organization** 44.4 (Autumn 1990): 479-526. **http://www.jstor.org/stable/2706851**

Neureiter, Norman. "Science as Diplomacy: Opinions: Making Connections." **Bulletin of the Atomic Scientists** 63.4 (2007): 22-23.

Nikitin, Mary Beth. "U.S.-Russian Civilian Nuclear Cooperation Agreement: Issues for Congress." **CRS Report for Congress** (17 September 2010).

Njolstad, Olav. "Preface." **Nuclear Proliferation and International Order**. Ed. Njolstad, Olav. Vol. 19. Routledge Global Security Studies. New York: Routledge, 2011.

Norris, Robert S., and Haas M Kristensen. "U.S. Nuclear Forcse, 2010." **Bulletin of the Atomic Scientists** (2010): 57-71.

Obama, Barrack. "**Remarks by the President in Hradcany Square**." Prague: Office of the Press Secretary, 2009.

Oznobishchev, Sergey. "Creating "Nuclear Order"." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011: 178-90.

Powell, Robert. "Crisis Stability in the Nuclear Age." **The American Political Science Review** 83.1 (1989): 61-76.

---. "Nuclear Deterrence Theory, Nuclear Proliferation, and Nmd." **International Security** 27.4 (2003): 86-118.

Reuters. "Powers Urge Defiant Iran to Cooperate with the Iaea." **The Jordan Times** 8 September 2010.

Ruggie, John Gerard. "Collective Goods and Future International Collaboration." **The American Political Science Review** 66.3 (1972): 874-93. **http://www.jstor.org/stable/1957484**

---. "International Responses to Technology: Concepts and Trends." **International Organization** 29.3 (1975): 557-83**. http://www.jstor.org/stable/2706342**

---. Ruggie, John Gerard. "International Responses to Technology: Concepts and Trends." **International Organization** 29.3 (1975): 557-83. http://www.jstor.org/stable/2706342

---. "What Makes the World Hang Together? Neo-Utilitarianism and the Social Constructivist Challenge." **International Organization** 52.International Organization at Fifty:Exploration and Contestation in the Study of World Politics 4 (1998): 855-85. **http://www.jstor.org/stable/2601360**

Said, Mohamed Kadry. "Israel's Nuclear Capability." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011: 39-61.

Sailor, William. "Creating the Ultimate Reactor." **Bulletin of the Atomic Scientists** (2010): 23-31.

Salama, Sammy, and Heidi Weber. "Arab Nuclear Envy." **Bulletin of the Atomic Scientists** 63.5 (2007): 44-63.

Sebenius, Jame K. "Challenging Conventional Explanations of International Cooperation: Negotiation Analysis and the Case of Epistemic Communities." **International Organization** 46.1 (1992): 323-65. **http://www.jstor.org/stable/2706959**

Secretary-General of the United Nations. **Comprehensive Nuclear Test Ban Treaty**. New York 1996. (Comprehensive Nuclear Test Ban Treaty). **http://www.state.gov/t/avc/trty/16411.htm**

Shaw, Douglas B. "Lessons of Restraint: How Canada Helps Explain and Strengthen the Nonproliferation Norm." **Bulletin of the Atomic Scientists** 66.5 (2010): 45-54.

Sigal, Leon. "How to Bring North Korea Back into the Npt." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011: 65-83.

Simmons, Beth A. and Stephan Haggard. "Theories of International Regimes." **International Organization** 41.3 (1987): 491-517. **http://www.jstor.org/stable/2706754**

Singh, Sonalo, and Christopher Wray. "The Correlates of Nuclear Proliferation: A Quantitatve Test." **The Journal of Conflict Resolution** 48.6 (2004): 859-85.

Sokolski, Henry. **Nuclear Power's Global Expansion: Weighing Its Costs and Risks**: Strategic Studies Institute, 2010.

Strange, Susan. "Cave! Hic Dragones: A Critique of Regime Analysis." **International Organization** 36.2 (1982): 479-96.

Tate, Trevor McMorris. "Regime Building in the Non-Proliferation System." **Journal of Peace Research** 27.4 (1990): 399-414.

Tertrais, Bruno. "France and Nuclear Non-Proliferation." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 217-26.

Tkecik, Michael. "Pakistan's Nuclear Weapons Program and Implications for U.S. National Security." **International Relations** 24.2 (2010): 176-218.

Walker, William. "Nuclear Order and Disorder." **International Affairs** 76.4 (2000): 703-24.

---. "The Uk, Responsible Nuclear Sovreignty, and the Disarmament Threshold." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 191-216.

Wheeler, Nicholas J. "Beyond Waltz's Nuclear World: More Trust May Be Better." **International Relations** 23 (2009). **http://ire.sagepub.com/content/23/3/428**

Woolf, Amy F. **Nuclear Weapons in the Former Soviet Union: Location, Command, and Control**. 1997. **http://www.fas.org/spp/starwars/crs/91-144.htm**

World Nuclear Association. **The New Economics of Nuclear Power 2006**. (The New Economics of Nuclear Power). **http://www.world-nuclear.org/reference/pdf/economics.pdf**

---. **WNA Nuclear Century Outlook Data 2010.** (WNA Nuclear Century Outlook Data). **http://www.world-nuclear.org/outlook/nuclear_century_outlook.html**

---. **Cooperation in Nuclear Power** August 2010. (Cooperation in Nuclear Power). **http://www.world-nuclear.org/info/inf38.html**

---. **Nuclear Power in the World Today** September 2010. (Nuclear Power in the World Today). **http://www.world-nuclear.org/info/inf01.html**

Young, Oran R. "International Regimes: Problems of Concept Formation." **World Politics** 32.3 (1980): 331-56. **http://www.jstor.org/stable/2010108**

---. "Regime Dynamics: The Rise and Fall of International Regimes." **International Organization** 36.2 (1982): 277-97. **http://www.jstor.org/stable/2706523**

---. "Political Leadership and Regime Formation: On the Development of Institutions in International Society." **International Organization** 45.3 (1991): 281-308. **http://www.jstor.org/stable/2706733**

Yunzhu, Yao. "China's Policy on Nuclear Weapons and Disarmament." **Nuclear Proliferation and International Order: Challenges to the Non-Proliferation Treaty**. Ed. Njolstad, Olav. Vol. 19. New York: Routledge Global Security Studies, 2011. 248-60.

Zenko, Micah. "Intelligence Estimates of Nuclear Terrorism." **Annals of American Academy of Political and Social Science** 607.Confronting the Specter of Nuclear Terrorism (2006): 87-102. **http://www.jstor.org/stable/25097841**

اعادة تقييم النظام لعدم انتشار الأسلحة النووية في القرن الحادي و العشرين

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ملخص

إنّ النظام لعدم انتشار الأسلحة النووية ما زال صامداً بالرغم من تغييرات شاملة عديدة في الميدان السياسي الدولي و بالرغم من وجود تحديات متنوعة منذ بدء انفاذ معاهدة عدم الانتشار و التي بني عليها النظام. و لكن خلال العقد الماضي قد واجه ذلك النظام تحديات غير مسبوقة و من الظاهر انّ السياسيون من دول اعضاء النظام لم يجدوا اي حل لتلك التحديات. نتيجةً لذلك الحال يعتبر كثيرين من السياسيون و محللوا العلوم السياسية انّ النظام هو على وشك التفسخ. بعد عمل مسحاً سريعاً من الناحية الادبية توضح انّ معظمها لا تنظر الى النظام بشكل شامل او انّها اهمال من استخدام النظريات او كلا هذه المشكلتين. يسعى هذا البحث لملء تلك الحفرتين في التحليلات باستخدام نظرية "المعرفية الضعيفة" لتحليل النظم الدولية و بادماج وجهة نظر شاملة لاجل تحليل فعالية النظام لعدم انتشار الأسلحة النووية من خلال النظم الدولية. يكشف البحث انّ النظام لعدم انتشار الأسلحة النووية بالنسبة لمجاله اوسع من المفهوم بشكل عام و بصورة إجمالية انّ هدف النظام هو تخفيف الخطر المحتمل الذي يواجهه الاستقرار و امن المجتمع الدولي من جهة التكنولوجيا النووية. في النهاية يعتبر هذا البحث, انّ النظام لعدم انتشار الأسلحة النووية ما زال ذو فعالية و لكنه اصبح أضعف بشكل شديد و بالاضافة لامكانية مرونة النظام في المستقبل و حسب تغييرات سياسية من خلال بعض دول مهمة و خاصةً من الولايات المتحدة الأمريكية.